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ABSTRACT

A study was undertaken to develop valid and reliable test instruments for mildly mentally handicapped students enrolled in consumer and homemaking subject matter areas--child development/parenting, nutrition, and consumer education. Following a literature search and identification of subject matter concepts, a pool of four-option multiple-choice test items was generated for tests in each of the three subject areas. Tests were then constructed and administered to a total of 138 mildly mentally handicapped students currently enrolled in vocational high schools throughout Minnesota (of these 26 were enrolled in child development/parenting, 34 in nutrition, and 13 in consumer education). The control group consisted of another 65 mildly mentally handicapped students who had not taken a course in the specific content areas being tested. In addition, 182 regular students were also tested. Analysis of test results indicated that while the child development/parenting test favors those who had taken the course, the other two tests appeared to favor those who had not taken courses in those areas. Recommendations called for revising the format of the tests, additional research incorporating participants' IQ or reading scores, and developing and testing additional instruments. (The tests are appended.) (MN)

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IMPACT RESEARCH FOCUSING ON MILDLY MENTALLY HANDICAPPED STUDENTS IN SECONDARY VOCATIONAL CONSUMER AND HOMEMAKING PROGRAMS IN MINNESOTA

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Other individuals who have made a significant contribution are Janet Swanson, Duluth, Minnesota, who recorded the audio-tapes and developed the graphic design on the cover page; Donna Pearson, graduate student at the University of Nebraska-Lincoln, who assisted in developing the nutrition instrument; Linda Tillman, graduate student at the University of Minnesota-St. Paul, who assisted in the development of the consumer education test; Dr. Connie Ley and Julie Johnson, University of Nebraska-Lincoln, for their suggestions and comments on the final revision; Claire Parker, University of Nebraska-Lincoln, for her assistance with the statistical analysis; and Dr. Vonna Malinen, University of Minnesota, Duluth, for serving as a consultant on special needs students.

PREFACE

This monograph is for educators, particularly those involved in Consumer and Homemaking programs. It presents a model for assessing mildly handicapped students who are mainstreamed into the secondary classroom. The focus is on the assessment process, not on the identification of the characteristics of mildly mentally handicapped students. The information available on the characteristics of mildly mentally handicapped students was used as a base for the development of the instruments.

The basic philosophy behind the instruments developed for use with the mildly mentally handicapped secondary school student was the belief that:

- mildly mentally handicapped individuals can indeed learn and that learning can be measured
- tests for the mentally handicapped need to be in a format different from that for regular students
- test items can be constructed so that mildly mentally handicapped students are forced to transfer knowledge to realistic/practical situations
- taking tests can be a learning experience for mildly mentally handicapped students
- teacher-made tests are superior to standardized or commerically prepared tests for mildly handicapped students
- valid and reliable instruments specifically designed for mildly mentally handicapped students can be adapted to various classroom situations, content areas, and grade levels

- results from valid and reliable instruments can indicate where subject content needs to be strengthened to better serve mildly mentally handicapped students
- results will give evidence of the effectiveness of consumer and homemaking programs for serving mildly mentally handicapped students to teachers, to parents, and to decision makers at the local, state, and national levels.

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INTRODUCTION

With increasing regularity decision makers, such as legislators, school board members, parents, taxpayers, and educators are requesting data which tend to indicate public school students are learning and benefiting from classroom instruction. Thus, teachers in all subject matter areas and at all levels are being challenged in terms of the achievement levels of their students. Vocational educators, including home economics educators, are no exception; Congress mandated in PL 94-482 (The Vocational Amendments of 1976) that the National Institute of Education undertake a study of all vocational education programs. Consumer and Homemaking programs were identified for specific study (Hughes, 1980).

The Consumer and Homemaking study is looked upon with optimism by vocational home economics educators; they have felt the need to have better information about their programs and have expressed concern about the lack of consistent assessment and lack of comparable data from state to state. The last national assessment of vocational home economics was made in 1958 through the United States Office of Education and was primarily a survey of content areas taught, amount of time devoted to each area, and enrollment in programs--a repetition of a similar study made in 1938.

In order to enrich the study mandated by Congress, a group of individuals from the Home Economics Division of the American Vocational Association formed an Ad Hoc Research Committee to provide leadership in enlisting voluntary support to collect and analyze data at a national level. An outgrowth of this effort was (1) a study focusing on a national "census" of content taught in Consumer and Homemaking programs and (2) a Workshop on Impact Research in Home Economics, held in December, 1978, where participants planned various studies

relating to the effectiveness of Consumer and Homemaking programs. Suggested studies included: effectiveness of parent education programs; effectiveness of selected areas of Consumer and Homemaking for physically and mentally handicapped students, and case studies of exemplary programs.

Due to its size, the group focusing on handicapped students limited its efforts to developing test instruments for use only with the mildly mentally handicapped. The decision to focus on three content areas--child development/ parenting, nutrition and consumer education--was based on PL 94-482, the law mandating instruction specifically in these Consumer and Homemaking areas.

Mildly mentally handicapped students were chosen over other handicapped conditions for the focus of this study primarily because teachers tend to deal with them in large numbers. Blankenship and Moerchen (1979) report that mildly mentally handicapped learners comprise the largest group of handicapped persons currently being served by vocational education.

Educators readily agree that mildly mentally handicapped individuals can learn the same content as non-handicapped students but simply do not learn as quickly nor as much in terms of facts or vital concepts of a topic. Therefore, adaptations must be made in the level of content, type of instruction, and evaluation. This is supported by the work of Johnson and Johnson (1975) who state that when mildly mentally handicapped students are placed in the least restrictive environment in a regular classroom, a cooperative goal structure seems to be desirable. In addition, they found that there is a marked difference in attitudes toward heterogeneity in skills, characteristics, beliefs, values, cultures and information among the individuals involved. In a cooperative environment, such differences are positively valued and viewed as valuable resources to help the group achieve a variety of goals.

Central to curriculum modification are common characteristics of mildly mentally handicapped learners that must be taken into consideration when adapting the teaching-learning environment. Fletcher (1980) summarizes these as:

1. Poor incidental learning and imprecise perceptions
2. Difficulty in following directions
3. Limited reading and receptive vocabulary
4. Limited ability to abstract and generalize
5. Poor memory
6. Short attention span
7. Inadequate social skills

With these characteristics in mind, the "least restrictive learning environment" can be provided by classroom teachers to help mildly mentally handicapped learners reach their optimum achievement level. However, the one element of the curriculum which presents a special challenge for teachers of the mildly mentally handicapped is evaluation. Many of the traditional techniques used for measuring student growth are not appropriate for handicapped learners.

Studies which highlight the involvement and achievement of special needs students will be of great value as decision makers express the desire to reach all students, including those who are mentally handicapped.

PURPOSE OF THE STUDY

The purpose of the study was to determine the effectiveness of instruction for mildly mentally handicapped students (EMR individuals with an IQ of approximately 55-80). Specifically, the objective was to develop valid and reliable test instruments for mildly mentally handicapped students enrolled in consumer and homemaking subject matter areas--child development/parenting, nutrition, and consumer education. The three instruments which were developed were used for testing randomly selected students throughout the state of Minnesota during Spring Quarter/Semester, 1980.

The major question posed for this study was:

> Is there a difference in the achievement level of mildly mentally handicapped students who have and those who have not taken courses in either child development/parenting, nutrition or consumer education?

The study design was posttest only. Three groups were involved: mildly mentally handicapped students who had and those who had not taken a course in the specific content area being tested and a group of regular students who had completed a course in the subject matter areas.

PROCEDURES

The major steps taken in the development of the consumer and homemaking tests consisted of (1) a search of literature, (2) identification of subject matter concepts, (3) creation of a pool of test items, and (4) development of a suitable test format.

A comprehensive search of literature and related research focused attention on testing instruments appropriate for mildly mentally handicapped students. The search revealed few studies pertaining to evaluation of those students and no evaluation devices or formats for mildly mentally handicapped students enrolled specifically in consumer and homemaking content areas. The few instruments found through personal conversations were either at the elementary school level or were too sophisticated for the target group.

Basic concepts for each of the three subject matter areas were identified from the list of concepts developed by the Ad Hoc Research Committee for the Home Economics Division of the American Vocational Association. After examining home economics resource materials for the age level and working with a panel of experts,

modifications were made to insure that the included concepts were essential and appropriate for mildly mentally handicapped students. The panel of experts consisted of subject matter specialists, special education personnel, teacher educators, and secondary classroom teachers.

Working with the identified concepts, a pool of four-option multiple-choice test items was generated for each test. All test items were reviewed by the panel of experts in terms of content validity, appropriateness for the target population, and for sex stereotyping. As revisions were made, items were reviewed and approved by all committee members and the panel of experts.

The first pool of items was developed for the child development/parenting subject area. This subject matter presented a special challenge because of the problems involved in simplifying numerous abstract concepts. At one point, consideration was given to including illustrations that would depict the content and simplify the idea. This approach was soon discarded due to the various interpretations that could be implied. Moreover, many abstract, multi-syllable words cannot be shortened or simplified; to do so would completely alter the meaning of the term. In addition, avoiding the use of value statements was necessary to insure accurate content. Another problem encountered was the necessity of eliminating controversial topics such as abortion.

The problem unique to the development of the nutrition instrument focused on dealing with large amounts of factual information. Consideration was given to including pictures of the various foods; this idea was discarded for several reasons: (1) not every response could be illustrated by a picture, (2) the expense of including well-drawn pictures, (3) the confusion that might result between similar food items, and (4) the desire to aid learners in recognizing printed words. In addition, traditional content such as the Basic Four Food Groups rather than the Basic Five Food Groups was used in order to eliminate confusion.

Since the underlying philosophy of consumer education is based upon the content area of management, difficulties with that test centered around developing test items which were appropriate to all learners, regardless of values unique to the individual. As with the other tests, many of the concepts included were abstract and difficult to simplify. Additionally, the scope of the content area is broad and encompasses many fields of study.

Construction of the test items involved the use of simple, familiar words and short, concise sentences and phrases. The two items relating to the emotional development of children shown in Figure 1 illustrate the difference between the wording for the regular students and the mildly mentally handicapped students.

FIGURE 1

Wording Differences in Test Item Construction

Test item written for regular students:

When children receive adequate expression of affection from their parents, the children will:

A. Find it easier to accept themselves and others

B. Learn to expect their parents to give them gifts as an expression of their affection

C. Become dependent on others for constant display of affection

D. Always be obedient as a way of returning their love

Test item written for mildly mentally handicapped students:

When children receive enough love from their parents, the children will:

A. Find it easier to accept themselves and others

B. Act spoiled

C. Depend on others for love

D. Always behave

An attempt was made to include questions above the knowledge level, as defined in Bloom's Taxonomy of Educational Objectives. For instance, items seen in Figure 2 require the student to supply information relating nutrition to a particular situation.

FIGURE 2

Application of Information Test Items

- Three-year-old Scott likes a snack in the morning. Which of the following would have the best nutrition for him?
  - A. Lemonade
  - B. Kool-aide
  - C. Fruit-flavored drink
  - D. Fruit juice
- Which food from the vending machine would give you the most nutrition?
  - A. Potato chips
  - B. Peanuts
  - C. Licorice
  - D. Candy bar

One of the difficulties of working with the Taxonomy is that the researcher may not be sure of the level at which the teacher is working and test items may not be properly identified.

The consumer education test contained some pictures and illustrations. Numerous pictures were used on the first draft of the test; reactions from the students during testing indicated that too many pictures were distracting and confusing. The consumer education test was revised to contain only essential illustrations such as the label in Figure 3.

FIGURE 3

Use of Illustrations in Test Items

Use the label below for the next three questions

Hunt's
MANWICH
Sloppy Joe Sauce
Hunt-Wesson Foods
P.O. Box 9688
Minneapolis, Mn
55196
tomatoes, water, sugar, salt, modified food starch, dehydrated onion, spices, dehydrated peppers, garlic powder, natural flavors
7c coupon
SEE DETAILS ON BACK
ADD 1 LB. OF FRESH GROUND BEEF
NET WT. 15½ oz. (439g)
EASY TO MAKE
MANWICH SLOPPY JOES
Brown 1 lb. ground beef in a skillet; pour off excess fat. Add 1 can of Manwich stir and simmer 5 minutes.
Serve on hamburger buns. Makes 6 man-size servings.
7¢ OFF

What company makes this sauce?

A. Hunt's

B. Sloppy Joe

C. Manwich

D. Hunt-Wesson Foods

The ingredient in the greatest amount is

A. Sugar

B. Water

C. Ground beef

D. Tomatoes

What do you need to add to make these sloppy joes?

A. Salt

B. Ground beef

C. Onion

D. Oil

The prerequisites for the testing format included efficiency in administration and simplicity in use for the mildly mentally handicapped students. Two methods, flip charts and reading aloud, had appeal but were discarded because of either time or money constraints. Experimentation with cassette tape and accompanying large-type (pica) test booklets showed that a controlled and standardized situation was possible and that mildly mentally handicapped students, their classroom teachers, and resource personnel all approved of the method. Students were able to use the cassette tape recorder with little or no assistance. Tests could usually be administered at a listening station by a para-professional and did not require the attention of a teacher. The cassettes were reusable.

The use of the cassette tape provided multi-sensory instruction, controlled for low reading skill, and provided for short attention span. The tests were recorded by an experienced female teacher who had no readily discernible accent and who was able to speak slowly and distinctly. Students were continually directed to place their finger beside the item being read and to mark only one answer. Each tape was reviewed by committee members and a special education consultant to insure the test was recorded accurately.

The test booklets, reproduced by the best black-on-white process available, consisted of a cover and 7-9 pages of test items. The use of pica type allowed 6 items to be placed on a page. The one-page cover developed for the first test was found to be unsatisfactory. Consequently, the cover for the next test was expanded to two pages: the first page had a line drawing added for interest and contained the request for demographic information and some directions. The second page contained sample test items and the rest of the directions to the students. This cover format proved satisfactory and was retained for the third test. Participants were instructed to record their selection to each test item

in the appropriate place directly in the test booklet itself and not on a separate answer sheet.

Field tests were conducted with each instrument. This was done with a few students from the target population who, along with their teachers, then were interviewed for reactions to wording, format, length, and procedure for administration. These were particularily valuable for providing item analysis data used in revisions and establishing that 40 items could be completed in a thirty minute period, the amount of time believed optimum for the target group. A total of 80 mildly mentally handicapped students took part in the field tests: 45 in the three versions of the nutrition instrument, 25 in the two versions of the child development/parenting instrument, and 10 in the only field test of the consumer education instrument.

Initially, the child development/parenting instrument was too difficult in terms of wording, length of sentences, and complexity of ideas. Modifications were made in terms of these factors.

The first draft of the nutrition test received negative reactions to item content from classroom teachers during the field test. Item analysis data supported the need for revision. Subsequent analysis revealed that practically all of the items were factual and from low taxonomy levels. The test was broadened to contain more application of concepts.

The original format of the consumer education test raised some special concerns. This test had been developed around an advertising layout format using captioned blocks to separate items relating to the same or similar concepts. In some instances, advertisements or pictures illustrated information pertinent to a single item or to more than one item. Positive preliminary reactions to the test were given by classroom teachers and special education personnel as they believed the format would hold the interest of the mildly mentally handicapped

students; negative reactions revolved around the necessity for special reading skills for some particular items. Reactions from a variety of individuals during the field testing indicated that there was a need for a more sequential ordering and fewer distractions in terms of captions and pictures that were not an integral part of the test. This test contained 38 four-option and 2 two option items.

The tests included in Appendix A (Child Development/Parenting), Appendix B (Nutrition), and Appendix C (Consumer Education) are the revised three-option versions and are being used currently for collecting additional data.

PARTICIPANTS

A 50 percent sample of secondary vocational consumer homemaking programs was randomly selected from a Minnesota State Department of Education computer printout. Letters were sent to the administrator and teachers (Appendix D) of each of the 229 identified programs requesting cooperation in taking part in the administration of the test instruments and in identifying (1) the students in their classes who were classified as mildly mentally handicapped (EMR individuals with an IQ of approximately 55-80) and (2) similar students who had not taken child development/parenting, nutrition or consumer education courses. Responses were received from 73 percent of the programs contacted; however, only 12 percent (20 programs) were able and willing to participate in the study. Reasons for not participating in this study included lack of time on the part of the teacher, not being able to secure parental permission, content not being taught in current semester, and negative reactions on the part of school administrators to perceived controversial issues.

All testing was completed during the Spring Quarter/Semester 1980, after parental permission had been received (see Appendix D for form used). Fifteen teachers were involved in testing both the nutrition and child development/

parenting instruments while seven teachers assisted with the testing of the consumer education instrument.

A total of 138 mildly mentally handicapped students were administered one of the three tests. Of these students, 26 were enrolled in child development/parenting, 34 in nutrition, and 13 in consumer education. The control group consisted of an additional 65 mildly mentally handicapped students who had not taken a course in the specific content area being tested. Generally, the two groups of students (those enrolled in the courses and those who were not) were divided by sex. Sixty percent of the students in the non-treatment group were males, while only 14 percent of the mildly mentally handicapped students who had taken the consumer and homemaking courses were males and almost all of them were enrolled in foods and nutrition courses. One hundred and eighty-two regular students were also tested in order to form a basis for comparison. In all, 320 students provided the data for analyses.

RESULTS AND DISCUSSION

Test statistics for the three consumer homemaking instruments are shown in Table 1. It can be seen that two kinds of results with the mildly mentally handicapped (MMH) students occurred: (1) the Child Development/Parenting test differentiated between groups and (2) the other two tests, appeared to favor those students who had not taken a course in the subject area in consumer homemaking. On all three tests the regular students performed better than did the MMH students.

TABLE 1

TEST MEANS STANDARD DEVIATIONS AND STANDARD ERRORS OF MEASUREMENT

GROUP	TEST		
	CD/PARENTING	NUTRITION	CONSUMER ED
HAVE NOT	n = 20 $\bar{X}$ = 18.2 SD = 4.4 Sem = 1.0	n = 25 $\bar{X}$ = 22.1 SD = 6.5 Sem = 1.3	n = 20 $\bar{X}$ = 23.3 SD = 5.8 Sem = 1.3
HAVE	n = 26 $\bar{X}$ = 23.4 SD = 5.6 Sem = 0.9	n = 34 $\bar{X}$ = 21.5 SD = 5.7 Sen = 1.0	n = 13 $\bar{X}$ = 20.4 SD = 5.4 Sem = 1.5
REFER-ENTS	n = 63 $\bar{X}$ = 30.3 SD = 3.5 Sem = 0.4	n = 59 $\bar{X}$ = 32.4 SD = 4.7 Sem = 0.6	n = 60 $\bar{X}$ = 30.3 SD = 4.2 Sem = 0.5
TOTAL	n = 109	n = 118	n = 93

Figures 4, 5, and 6 show mean scores and standard error of measurement for each test. The nutrition test failed to measure any treatment effect, if there was one, for the mildly mentally handicapped students (Figure 5). The mean scores for the consumer education test (Figure 6) seem to indicate that the treatment effect was in fact negative for the MMH students, although not statistically significantly so.

For further information, see Appendix E for the results as shown in Figures 7 through 12.

FIGURE 4

Mean Scores by Groups for the

Child Development / Parenting

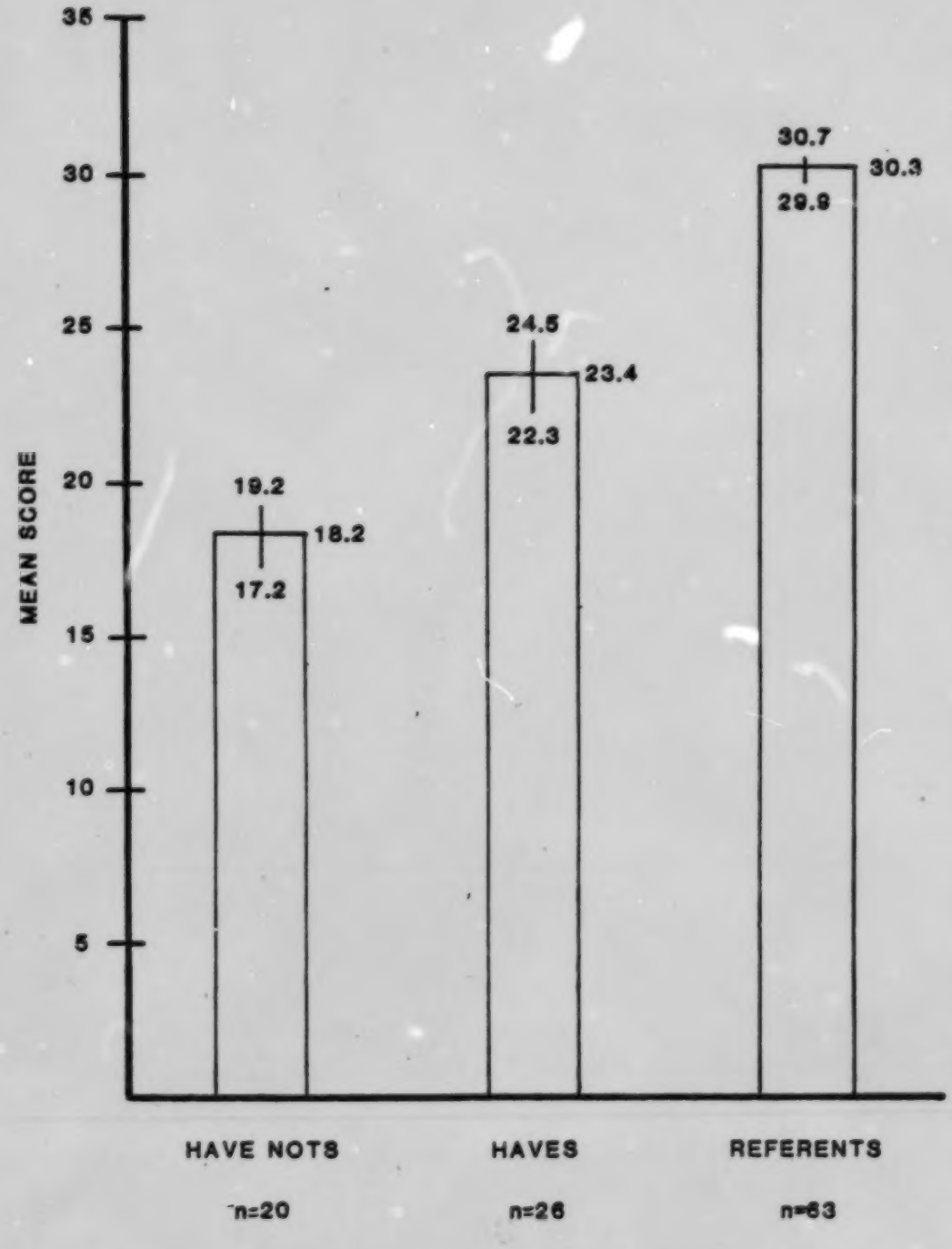


FIGURE 5

Mean Scores by Groups for the Nutrition Test

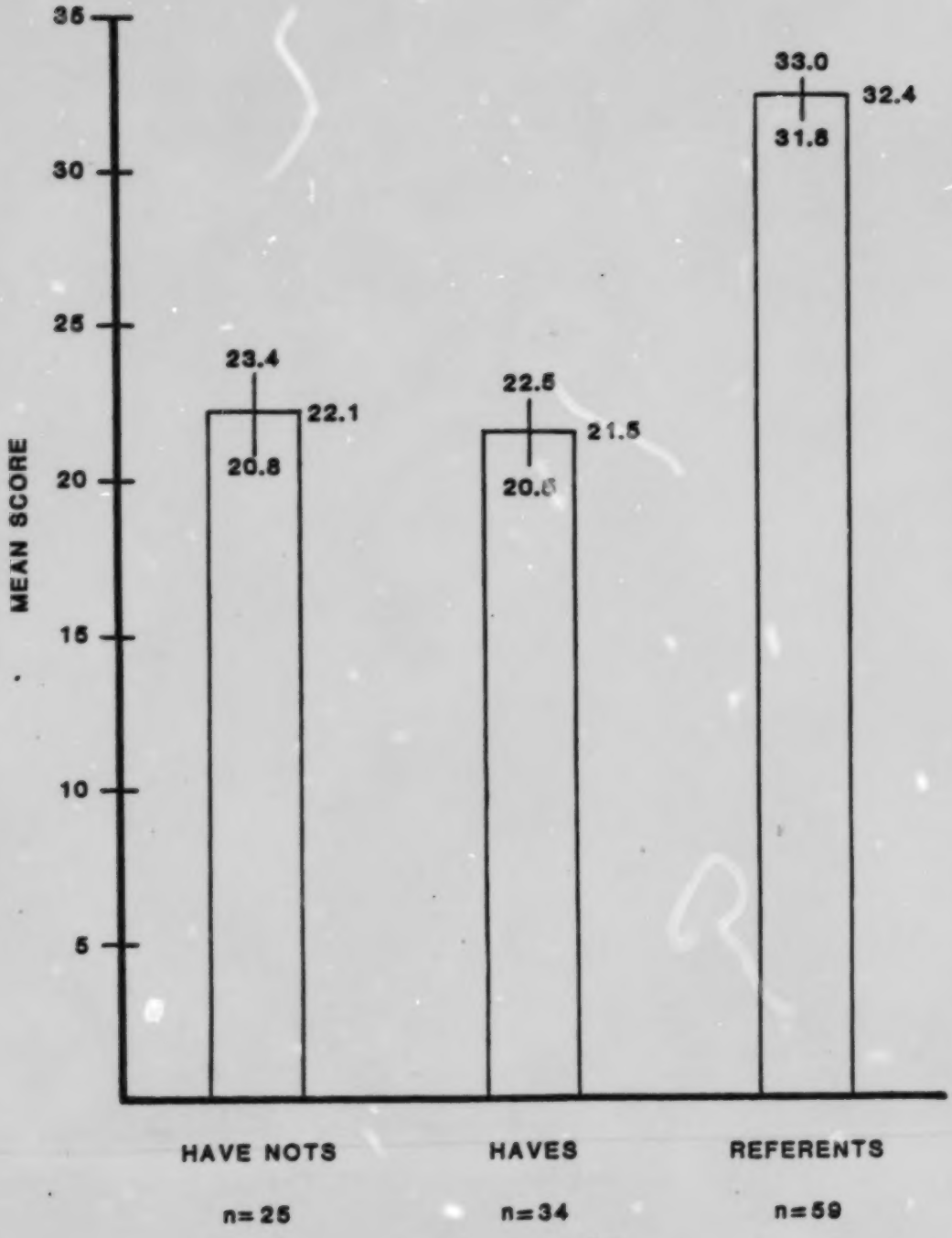
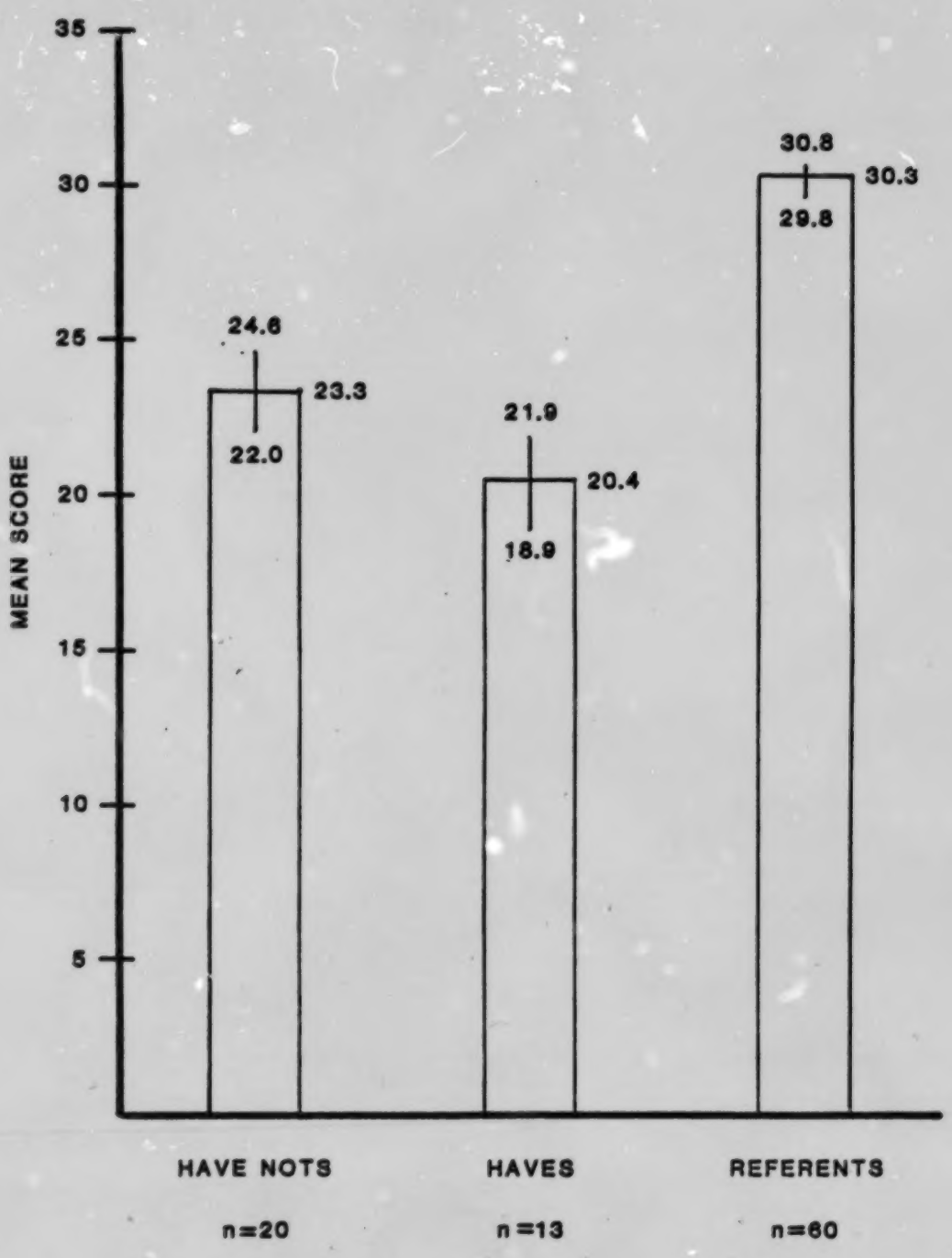


FIGURE 6

Mean Scores by Groups
for the Consumer Education Test



The reliability coefficient is presented in Table 2. The child development/ parenting coefficient alpha varied from .55 for the referent group to .56 for the "have not" group and .75 for the "have" group. The nutrition test showed a .74 coefficient alpha for the "have" group, .79 for the referents and .80 for the "have not" group. The coefficient alpha for the consumer education test was .27 for the "have" group, .67 for the referents and .77 for the "have not" group.

TABLE 2

COEFFICIENT ALPHA: INTERNAL CONSISTENCY BY GROUPS

GROUP	TEST		
	CD/PARENTING	NUTRITION	CONSUMER ED
Have Not	.56	.80	.77
Have	.75	.74	.27
Refer-ents	.55	.79	.67

In this study, the coefficient alpha was used to determine a group of students rather than an assessment of individual achievement. Chase (1978) indicates that when using a test to estimate group status, reliabilities between .70-.80 are acceptable. Considering this information, the nutrition test can be used with confidence for all three groups--the "have", the "have not" and the referents.

Item analyses were performed on all three tests, items which did not meet the criterion for discrimination were then removed, and new internal consistency correlations determined for the combined tests.

Discrimination indices, according to Diederich (1960) should be positive and as large as possible in order to maximize measured differences between

individuals. High discrimination indices relate directly to high internal consistency reliability of a test. Only items of .30 or above biserial value should be retained; items below .40 should be improved if possible.

Examination of biserial correlations (discrimination) for the tests for the mildly mentally handicapped students disclosed a range of -.31 to .80 suggesting that some of the test items be re-evaluated, revised, or removed. Results of the item analyses for each test can be found in Appendix F.

The mean percentage difficulty for all tests was in the mid-range (.53-.55). Scanning the difficulty indices for a comparison of MMH students (see Appendix E), it was found that approximately three fourths (75-88%) of all test items fell in the .30-.70 level of difficulty which is set by most authorities as the standard for maximum differentiation among individuals. However, a test developed especially for MMH students would be expected to contain sufficient easy items to give students a feeling of confidence. The hard items in all tests merit attention to any reason for difficulty which will often prove to be a structural defect.

Authorities in measurement differ in their beliefs regarding the optimum level of difficulty for classroom tests. The most rigid support the use of only 50 percent difficulty items (i.e., .40-.60). For the 4-option multiple-choice test, the criterion of 74 average difficulty is supported by Thorndike and Hagen (1969). Hopkins and Antest (1978) suggest the ideal difficulty index for the 4-option item test is 37-38 with a range of about 25-50. However, Payne (1974) suggests limiting the range of item difficulties to between 30 and 70 percent. On the other hand, if a master test (criterion-referenced test) is desired, the indices of difficulty should group closely around 90 percent; the indices of discrimination will be quite low but should be positive (Marshall and Hales, 1971).

The next step was to run a computer study eliminating those items with a discrimination index of less than .20. The SCALE program from the Computer Network Library at the University of Nebraska-Lincoln is a special program designed for use with questionnaires that have Likert-type responses or for use with tests that have multiple-choice answers. SCALE may be used with or without a key for correct responses. When used with a correct response key, the score attained is the number of responses that agree with the correct response key.

The results of the SCALE program to collapse the tests over conditions for both the referent (regular) group and the combined MMH groups are shown in Table 3. Although the criterion of .20 discrimination was applied, difficulty level was not a determining factor in selecting items for removal. It can be seen that slight changes were obtained in the coefficient alphas for the MMH group but little or no change was obtained for the regular group. Table 4, 5, and 6 show the items removed for the Child Development/Parenting, Nutrition, and Consumer Education tests respectively. The range of discrimination indices is greatly enhanced but little change is shown in mean difficulty.

TABLE 3

COEFFICIENT ALPHA: INTERNAL CONSISTENCY CONSOLIDATED

GROUP \ FORM		TEST		
		CD/PARENTING	NUTRITION	CONSUMER ED
MMH	O	.75	.77	.77
	R	.81	.80	.82
Referents	O	.55	.79	.67
	R	.52	.80	.67

O = original Test; R = revised test

TABLE 4

ITEMS REMOVED: CD/PARENTING TEST*

ITEM NO.	DISCRIMINATION INDEX	DIFFICULTY
1	.12	.75
4	.06	.47
21	.06	.59
23	.16	.31
27	.18	.47
31	.17	.37
33	.14	.31

*Removed from Combined MMH Test Results

Range of discrimination:

Original test	.06-.58
Revised test	.20-.58

Mean Difficulty:

Original test	.54
Revised test	.56

TABLE 5

ITEMS REMOVED: NUTRITION TEST*

ITEM NO.	DISCRIMINATION INDEX	DIFFICULTY
3	- .004	.37
6	.20 **	.24
10	.22 **	.46
13	.17	.33
14	.18 **	.35
18	.15	.59
22	.07	.35
23	.19 **	.50
25	- .06	.37
37	.18 **	.59
38	.15	.57

*Removed from Combined MMH Test Results

**These items may be retained if their removal would make the test too short. These items have an acceptable difficulty level, while the discrimination (point biserial correlation) is border-line, the overall match between point biserial and difficulty is satisfactory.

Range of discrimination

Original test	-.06 - .63
Revised test	.19 - .63

Mean Difficutly

Original test	.53
Revised test	.57

TABLE 6

ITEMS REMOVED: CONSUMER EDUCATION TEST*		
ITEM NO.	DISCRIMINATION INDEX	DIFFICULTY
2	.16	.88
6	.16	.24
7	- .31	.70
14	.09	.64
16	.15	.39
19	.16	.91
21	.02	.91
24	.16	.12
32	.01	.21
34	- .09	.91

*Removed from Combined MMH Test Results

Range of discrimination

Original test	-.31 -.56
Revised test	.16 -.56

Mean difficulty

Original test	.55
Revised test	.54

Table 7 is a summary of the number and percentage of items removed from the original tests. Nutrition had the greatest number (11 items) and Child Development/Parenting the least (7) items removed.

TABLE 7

NUMBER OF ITEMS IN THE ORIGINAL AND REVISED TESTS

FORM	TEST		
	CD/PARENTING	NUTRITION	COMSUMER ED.
ORIGINAL	40	40	40
REVISED	33	29*	30
NUMBER OF ITEMS REMOVED	7	11**	10
PERCENTAGE REMOVED	17.5	27.5***	25.0

* Would be revised upward to 34 if items 6, 10, 14, 23 and 37 are retained as indicated in Table 6.

** Would be revised downward to 6 if items 6, 10, 14, 23 and 37 are retained as indicated in Table 6.

*** Would be revised downward to 15% if items 6, 10, 14, 23 and 37 are retained as indicated in Table 6.

Two-factor fixed-effects ANOVAs were performed to determine if indeed the tests discriminated between and among groups.

The results of first analysis of variance for mildly mentally handicapped students only (independent variables were condition and test taken; dependent variable the number of correct responses for the original forty-item test) appear in Table 8. A statistically significant group by test interaction ($p = .005$) was found. These results indicate that the tests do differentiate between those MMH students who have taken the consumer and homemaking subject matter from those who have not taken the subject matter courses.

TABLE 8

ANALYSIS OF VARIANCE SUMMARY TABLE:
MILDLY MENTALLY HANDICAPPED STUDENTS

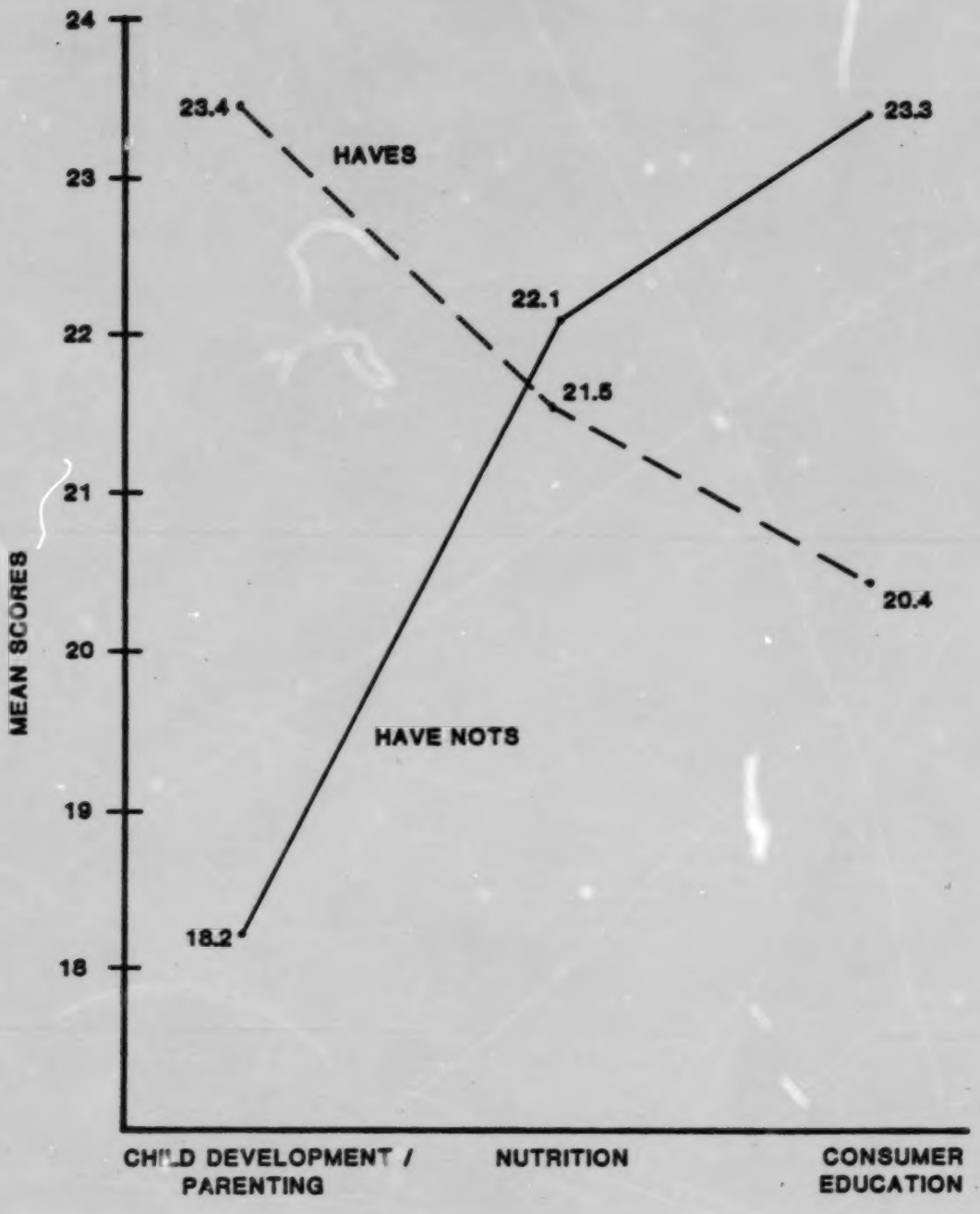
SOURCE OF VARIATION	SS	df	MS	F
MAIN EFFECTS				
GROUP	21.394	1	21.394	0.668
TEST	26.883	2	13.442	0.419
INTERACTION				
GROUP * TEST	358.586	2	177.293	5.532**

** $p < .005$

A graph of the means for the tests by condition (control and treatment) is shown in Figure 13.

FIGURE 13

Test Means for MMH Groups



The presence of interaction for group by test found in the ANOVA procedures complicates the discussion of the differences found in the achievement levels of mildly mentally handicapped students who had taken and those who had not taken courses in either Child Development/Parenting, Nutrition, or Consumer Education. Since these differences were not the major question posed for this study, t-tests were performed and only the Child Development/Parenting test was found to statistically differentiate between the two groups of mildly mentally handicapped students (t=3.57, df=44, 2-tailed p=.001).

In addition, a second ANOVA where the condition was designated as mildly mentally handicapped and regular was performed. A statistically significant group by test interaction was found (see Table 9). These results indicate that these tests do differentiate between regular students who have taken courses in the consumer and homemaking subject matter tested and the mildly mentally handicapped students tested, some of whom had taken the consumer and homemaking subject mattter and some who had not.

TABLE 9

ANALYSIS OF VARIANCE SUMMARY TABLE: ALL STUDENTS

SOURCE OF VARIATION	SS	df	MS	F
MAIN EFFECTS				
GROUP	6952,76	2	3476.38	148.38
TEST	114.44	2	57.22	2.44
INTERACTION				
GROUP * TEST	439.92	4	109.98	4.69***

***p < .001

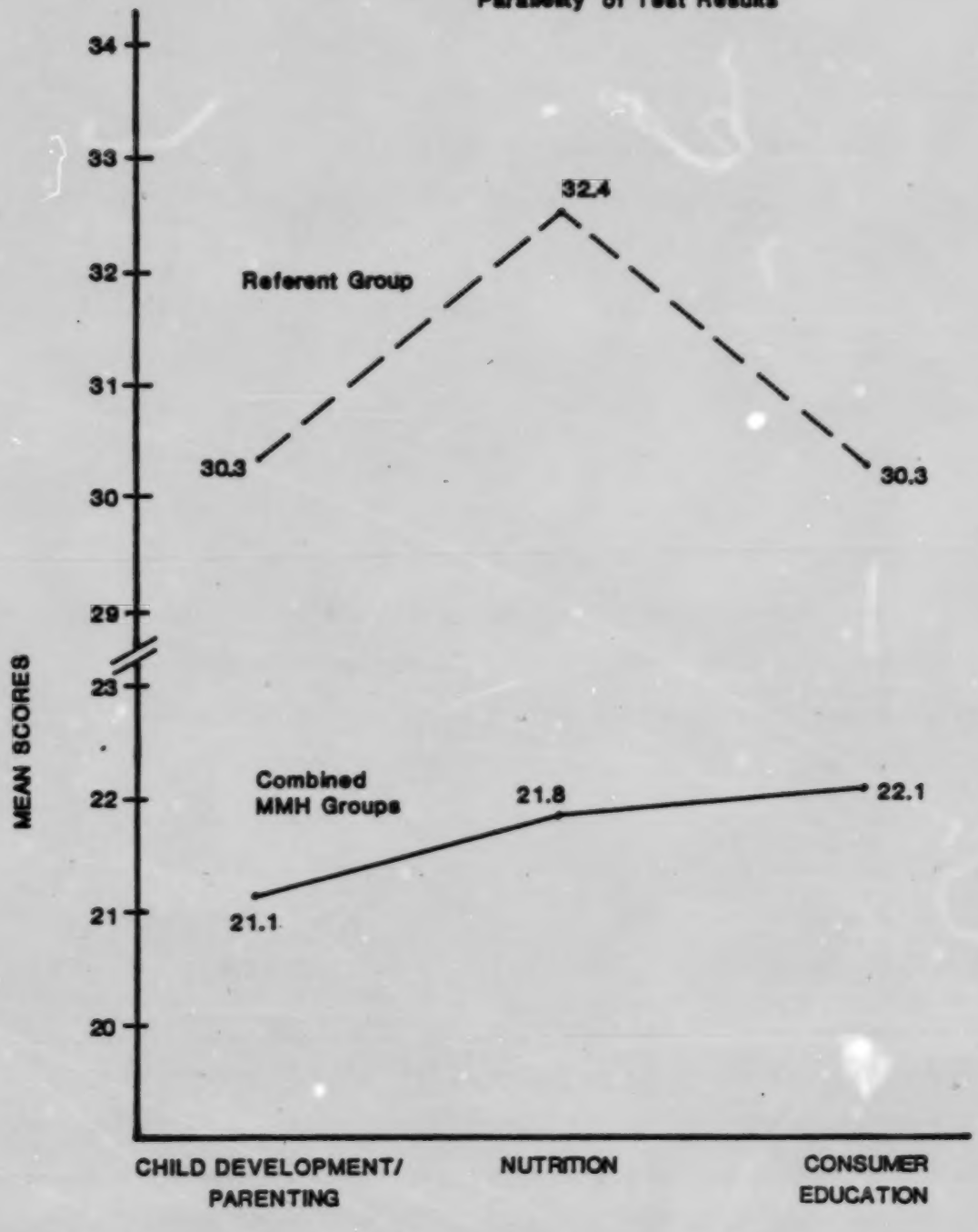
Figure 14 shows the test means for the referent group and the combined mildly mentally handicapped groups and illustrated the statistically significant F shown in Table 9 for the test of parallelity of test results.

One of the questions arising out of the testing was test and item length. Inspection of the tests showed that no test item was skipped on any test and that in 10-30 percent of the items the first or last option was chosen by no one. In the Consumer Education test particularly over two-thirds of all students did not choose the fourth option. This, of course, could be a function of the distractor's perceived plausibility or it could indicate that the use of three-option multiple-choice items would be more appropriate for testing the MMH student. Three options would allow application, evaluation, or problem-solving skills to be tested. Payne (1974, p. 281) cites Tversky's mathematical work showing that "the use of three alternatives for each question will maximize the discriminability, power, and information yielded per unit of time".

Inspection of the test results showed that only one regular student was able to score a full forty points although from 4-25 percent scored 90 percent or more on the three tests. More of the regular students scored high on the Nutrition test than the other two tests.

FIGURE 14

Parallelity of Test Results



CONCLUSIONS

The purpose of this study was to determine the effectiveness of instruction for mildly mentally handicapped students. Specifically, the objective was to develop valid and reliable test instruments for mildly mentally handicapped students enrolled in consumer and homemaking subject areas--child development/parenting, nutrition, and consumer education.

While the groups tested were small, valuable information was obtained as a basis for developing more and better tests for use with mildly mentally handicapped students.

A major conclusion derived was that the tests differentiated between those mildly mentally handicapped students who have taken and who have not taken courses in child development/parenting, nutrition, and consumer education ($F(2,132)=5.532<.005$). The child development/parenting test in particular differentiated between the mildly mentally handicapped groups ($t=3.57$, $df=44$, 2-tailed $p=.001$). Therefore, the course in child development/parenting was effective in raising the achievement level of mildly mentally handicapped students who had enrolled in the course.

The results from the nutrition test indicated that the mildly mentally handicapped students who had not taken the course performed slightly better than those who had taken the course. This may be due to the amount of time spent on food preparation principles in Consumer Foods and Nutrition courses rather than on nutrition education concepts. The second concern is that the nutrition test was composed of a large number of knowledge level items. Because of this, it is conceivable that the students who had not taken the course could have learned the facts from other sources such as the media and other content courses.

Likewise, the results from the consumer education test indicated the mildly mentally handicapped students who had not taken the course did slightly better than the mildly mentally handicapped students who had taken the course. This test also had a large number of questions dealing with factual information which might have been learned from other sources. In addition, the format, which differed from the other two tests, tended to be confusing and contained many distractions. Less time was invested in the preparation of this instrument than in the other two tests.

Based on the results, both the nutrition and consumer education instruments were carefully examined and subsequently revised, although field testing is not complete.

If data, such as the students' IQ or reading scores, had been available, Bartlett's test of homogeneity could have been utilized. The results of such a test would have shown the groups as non-homogeneous; the mildly mentally handicapped students had a wide range of IQ scores (55-80), differing abilities in terms of reading level, and a variety of previous experiences related to the content covered in the tests. In addition, a disproportionate number of females comprised the mildly mentally handicapped groups who had taken the Consumer and Homemaking courses. If the mildly mentally handicapped groups had been more homogeneous, the results would most likely have indicated a higher achievement level on the part of those mildly mentally handicapped students who had taken the courses than those who had not.

Other conclusions of interest are:

1. The use of the cassette tape in conjunction with the large-type booklet appears to have been successful for testing the mildly mentally handicapped students. By using the dual-sensory approach, the students had the additional advantage of visually seeing the words at the same time they were having them spoken. This is supported by Reynolds (1979) who suggests test for mentally handicapped students be orally presented and require only minimal written response.

2. Content validity was achieved through the use of various panels of experts. The reliability coefficients for the nutrition instrument indicate it is acceptable for classroom use. The reliability coefficients for the child development/parenting and consumer education instruments indicate a revision is necessary in order to increase reliability.

3. Although the findings were positive for the length of the instruments administered, it is highly possible that using a thirty-item format would be more successful with the MMH student. Consideration needs to be given to reading and listening skills for the students as well as the anxiety created by the test situation itself and fear due to misreading or mishearing the test items.

4. The three-option multiple-choice format is a reasonable alternative for use with the MMH student. Findings of studies by Reynolds (1979) and by Schultz and Rougvie (1977) support this consideration.

5. It is entirely possible that preassessing all students with these, or similar, instruments would provide a base-line of already known concepts for the consumer and homemaking teacher to use in planning curriculum in the subject matter.

6. These tests can be used with the regular student but it might be more appropriate to include some alternate or additional techniques when used in a mixed classroom.

7. Even though only a limited number of educators have focused efforts on developing measurement strategies and instruments appropriate for the mildly mentally handicapped, it appears that teachers may successfully develop classroom tests for this target group and the tests will have reasonably high internal consistency coefficients. Furthermore, Wallace and Larson (1978) report that teacher-made tests offer the benefit of being closely related to on-going programs of instruction. Thus, data collected from teacher-made tests as opposed to standardized tests, are of greater value and significance.

RECOMMENDATIONS

On the basis of this study, the following recommendations are made for further research:

1. Develop additional tests appropriate for mildly mentally handicapped students in other home economics subject matter areas.
2. Conduct a study with similar students using a pre-post test design using pre-test scores as covariate. The unreliability of change scores would make the test results doubtful if change scores only were used.
3. Compare the achievement levels of mildly handicapped students enrolled in comprehensive consumer and homemaking courses to that of mildly mentally handicapped students enrolled in Quarter/Semester courses.
4. Conduct a longitudinal retention study of those mildly mentally handicapped students enrolled in consumer and homemaking courses.
5. Determine attitudes of mildly mentally handicapped students/parents toward their consumer and homemaking teachers and programs.
6. Determine whether the sex of the learner has an influence on the achievement level in each of the three content areas.
7. Generate a larger pool of questions to provide alternate tests for the same subject areas.
8. Interview individuals within a community, such as businesspersons and agency personnel, in order to identify concepts in the areas of child development/parenting, nutrition and consumer education which are perceived as necessary for a functional adult.

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APPENDIX A

REVISED CHILD DEVELOPMENT/PARENTING TEST

CHILD DEVELOPMENT AND PARENTING KNOWLEDGE TEST

Dear Student,

Thank you for taking part in this study. The information you provide will help us learn what you know about Child Development and Parenting. If you find any question you do not want to answer, skip it and go on to the next question.

COMPLETE THE FOLLOWING:

SCHOOL _____

GRADE _____

SEX (please check)

_____ Male

_____ Female

SAMPLE QUESTIONS

For each test question, circle the letter next to the response which best answers the question.

For example:

1. A good snack for a child is:

   A. potato chips

   B. orange juice

   C. candy bar

What is the correct answer? That's right --- It is orange juice. Orange juice is the correct answer. Everyone circle letter B.

2. Children are the legal responsibility of their parents until the age of:

   A. 18

   B. 19

   C. 21

What is the correct answer? That's right --- It is 18. 18 is the right answer. Everyone circle letter A.

Do you have any questions? If so, turn off the tape recorder and ask your teacher. If not, you are ready to start the test. Please turn the page.

<u>WRITE DIRECTLY ON THE TEST PAPERS</u>

1. The best place for pre-school children while parents are working is
   A. playing with friends outside
   B. with a ten-year-old brother or sister at home
   C. in a day care or nursery center

2. Which would provide the best home environment for children?
   A. an understanding family
   B. parents willing to give up things for their children
   C. playmates in the same age group

3. How would you best prepare yourself to be a parent?
   A. work with children
   B. set goals for yourself
   C. accept yourself as you are

4. The cost of having a child needs to be considered
   A. before conception
   B. while the mother is in the hospital
   C. when the child starts school

5. What is the most important thing to do before taking on the responsibilities of parenthood?
   A. think about your feelings toward children
   B. talk with others who have raised children
   C. see a film about children

6. Which method of birth control did you learn is the most effective?
   A. diaphram
   B. pill
   C. condom

7. How long are sperm cells capable of fertilizing an ovum?
   A. a few minutes
   B. a few hours
   C. two days

8. During which period of pregnancy are the most serious problems likely to occur with the unborn baby?
   A. During the first three months
   B. 4 to 6 months
   C. 7 to 9 months

9. How should a woman change the amount of food eaten from the basic four during pregnancy?
   A. fewer servings from each group
   B. more servings from each group
   C. more servings from milk group

10. Which disease can cause defects in the baby if the mother has it during early pregnancy?
   A. flu
   B. chicken pox
   C. measles

11. What is the most important reason for having a physical examination in early pregnancy?

    A. to select the method of birth to be used

    B. to find out if the mother is healthy

    C. to measure the birth canal

12. A parent should check with a doctor if a child does not start to walk by age

    A. 9 months

    B. 1½ years

    C. 3 years

13. In a young child, small muscles would be developed through activities such as

    A. finger painting

    B. running

    C. riding a tricycle

14. Most of the time a two-year-old child enjoys playing

    A. in large groups

    B. with a group of friends

    C. alone or near one other friend

15. The growth of the baby's brain before it is born can be affected by

    A. the food the mother eats

    B. the physical exercise of the mother

    C. the education of the parents

16. To help a 5-year-old child develop good behavior, a parent should

    A. spank often

    B. set a good example

    C. make the child feel guilty

17. Disciplining children means

    A. slapping and spanking

    B. put them in a room alone

    C. teaching them self-control

18. Children have temper tantrums to

    A. get what they want

    B. get attention from others

    C. get people to feel sorry for them

19. If a child has a temper tantrum, you should

    A. feel guilty because the child caused the tantrum

    B. punish the child

    C. leave the child alone for awhile

20. When children receive enough love from their parents the children will

    A. find it easier to accept themselves and others

    B. depend on others for love

    C. always behave

21. A good way to help children deal with jealousy is to

A. punish them when they show signs of jealousy

B. explain to them why it is silly to be jealous

C. give them more attention

22. What kind of play do two-year-olds like best?

A. coloring pictures

B. stacking blocks

C. bouncing a ball

23. Parents help their children develop good feelings about themselves (self esteem) by

A. teaching their children that they are to be seen not heard

B. showing their children off at every opportunity

C. accepting their children as they are

24. When using words, what is a two-year-old likely to do?

A. puts words into sentences

B. puts two or three words together

C. constantly asks questions

25. In helping children learn to speak right, a parent should

A. use a soft voice

B. speak each word slowly

C. speak clearly in normal tones

26. A good way to help a three-year-old learn to think is to give the child

A. coloring books

B. simple toys with many uses

C. a new game and explain how it is to be played

27. Which of the following is most likely to teach good eating habits to children?

A. give them dessert only after vegetables are eaten

B. encourage children to eat all they possibly can

C. offer a small amount of a variety of foods

28. If you were bathing a one-year-old child, which would you do?

A. have a 5-year-old brother or sister supervise

B. be with the child all the time

C. let the child play alone in the tub

29. The main reason for child abuse is

A. to teach the child right from wrong

B. to make the child learn to obey

C. because of problems in their own life

30. When toilet training a child, which of the following should you do?

A. make the child stay on the toilet until done

B. make the child feel bad for wetting its pants

C. have the child tell you when it has to go to the toilet

31. Toilet training should begin when a child is near the age of

A. 9 months

B. 1 year

C. 2 years

32. If you were a parent who was very angry with your child, what would you do?

A. cool off, then talk with the child

B. shake the child by the shoulders

C. make the child skip a meal

33. If children ask you a question about sex, you should

A. change the subject

B. tell them not to ask such questions

C. answer with simple correct terms

34. Before a parent takes a child to a dentist for the first time, the parent should

A. tell the child not to cry

B. let the visit be a surprise

C. visit the office and explain what to expect

35. If a child swallows a poison, you should

A. put your finger down its throat

B. call a doctor or the emergency number

C. have the child drink a glass of milk

36. The best reason for breast feeding is

A. breast milk helps keep the baby healthy

B. creates a bond between mother and child

C. it costs less money

37. If your 6-year-old child begins wetting the bed, what is the best source of information before going to the doctor?

A. relatives

B. books on child care

C. school psychologist

38. The best type of schedule in a day-care center for 4-year-old children would be one where a great deal of time is spent

A. watching television

B. in any activity they choose

C. in a variety of planned activities

39. If your ten-year-old child is three hours late returning from the little league game and the coach doesn't know where he or she is, whom should you contact right away?

A. the child's friends

B. the police

C. the child's teacher

Scoring Procedures for

Child Development and Parenting Knowledge Test

1. C
2. A
3. A
4. A
5. A
6. B
7. B
8. A
9. C
10. C
11. B
12. B
13. A
14. C
15. A
16. B
17. C
18. B
19. C
20. A
21. C
22. B
23. C
24. B
25. C
26. B
27. C
28. B
29. C
30. C
31. C
32. A
33. C
34. C
35. B
36. A
37. B
38. C
39. B

APPENDIX B

REVISED NUTRITION TEST

NUTRITION

KNOWLEDGE TEST

Dear Student,

Thank you for taking part in this test. Will you please complete the following:

SCHOOL _____ GRADE _____

SEX (please check)

_____ Male

_____ Female

This test is about food and nutrition. For each question, circle the correct answer. There is only one correct answer. For example:

A snack that is healthy for a teenager is:

A. candy bar

B. orange

C. glazed donut

The correct answer is letter B, an orange. Circle the letter B.

Do you have any questions? If so, turn off the tape recorder and ask your teacher. If not, you are ready to start the test. Please turn the page.

WRITE DIRECTLY ON THE TEST PAPERS

1. The basic food groups give us
   A. a good way to lose weight
   B. a guide for daily eating
   C. a good set of menus

2. Tom does not like milk. Which food could he eat that will give him the same nutrients?
   A. yogurt
   B. grapefruit juice
   C. vegetable soup

3. Which foods help to build and repair your body?
   A. bread and cereals
   B. meats and fish
   C. oranges and apples

4. Which is the <u>best</u> food to eat for protein?
   A. raw fruit
   B. cooked cereal
   C. chicken

5. In order to get enough vitamins and minerals in our bodies, we should
   A. drink lots of water
   B. take vitamin pills daily
   C. eat foods from the basic food groups

6. Which food would you eat to get vitamin A?
   A. potatoes
   B. tomatoes
   C. carrots

7. A diet low in iron could cause
   A. overweight
   B. anemia
   C. cold sores

8. Which food gives our bodies the <u>most</u> iron?
   A. meats
   B. cheeses
   C. canned vegetables

9. The mineral that builds red blood cells is
   A. calcium
   B. iron
   C. fluoride

10. Calcium and phosphorus build
    A. strong muscles
    B. blood cells
    C. bones and teeth

11. The food with the most calcium and phosphorus is
    A. pancakes
    B. pizza
    C. ice cream

12. What foods give us fiber?
    A. canned vegetables
    B. whole grain bread
    C. puddings

13. Vitamin C would be found in
    A. oranges and tomatoes
    B. green beans and apples
    C. peas and watermelons

14. We get Vitamin D from
    A. fruits and vegetables
    B. sunshine and milk
    C. cereal and eggs

15. Which give the body the most B vitamins per serving?
    A. fruits and vegetables
    B. milk and cheeses
    C. breads and cereals

16. Butter, margarine, and cooking oils are foods that are high in
    A. fats
    B. protein
    C. carbohydrates

17. [illegible]gar, macaroni, crackers and bread are foods with
    A. proteins
    B. carbohydrates
    C. minerals

18. A cheeseburger belongs to which food group?
    A. meat, cereal
    B. milk, meat, cereal
    C. meat, fruit, vegetable

19. Which of these lunches has food from each of the food groups?

A. hamburger, french fries, orange juice

B. macaroni and cheese, potato chips, cupcake

C. hot dog sandwich, lettuce salad, yogurt

20. Foods in the fruit-vegetable group are high in

A. carbohydrates and fat

B. vitamins and minerals

C. protein and iron

21. Sally wants to lose weight. Which of the following would be the best way to take off weight and keep it off?

A. exercise and eat less food every day

B. exercise and eat the same as now

C. eat less food every day

22. Eating too many calories each day will cause some people to

A. become sick

B. become strong

C. gain weight

23. Annie is a vegetarian. Which foods could she eat to get complete protein?

A. beans and cornbread

B. nuts and carrots

C. beans and apples

24. Which food is high in calories and low in vitamins and minerals?

A. raisins

B. tomatoes

C. donuts

25. Most American diets have too much
    A. vitamin A
    B. salt
    C. calcium

26. Jane is pregnant. Now she needs to eat more:
    A. ice cream bars
    B. milk
    C. popcorn

27. Which bag lunch would <u>not</u> spoil quickly?
    A. peanut butter sandwich and orange
    B. sliced chicken sandwich and tomato
    C. tuna sandwich and potato salad

28. Three-year-old Scott likes a snack in the morning. Which of the following would have the best nutrition for him?
    A. kool-aide
    B. fruit-flavored drink
    C. fruit juice

29. Elderly people need to eat fewer calories because
    A. it is harder for them to chew
    B. they feel sick more often
    C. they are not as active

30. When you plan a meal, which are the best foods to use instead of meat to get protein?
    A. eggs or cheese
    B. sweet potatoes or cabbage
    C. pancakes or muffins

31. How much water should a person drink each day?

A. about two glasses each day

B. about four glasses each day

C. about eight glasses each day

32. Most Americans need to eat less

A. minerals

B. vitamins

C. carbohydrates

33. What people eat is affected <u>most</u> by

A. their activity level

B. the foods grown in their state

C. the likes and dislikes of their families

34. Fred is overweight. The best way for him to lose weight is to

A. eat less food every day

B. leave out breads and cereals

C. take diet pills each day

35. Which is <u>best</u> for a child's meal?

A. a large helping of one food

B. several foods in small helpings

C. small helpings of one food

36. Susie is on the track team. In order to have quick energy before a meet, she should eat

A. carrots

B. ice cream

C. an orange

37. Who keeps our food safe?

A. farmers' groups

B. grocery store owners

C. government

38. Feeding a baby or a very young child the wrong kinds of food could cause

A. colds

B. sickness

C. measles

39. Which food from the vending machine would give you the most nutrition?

A. potato chips

B. peanuts

C. candy bar

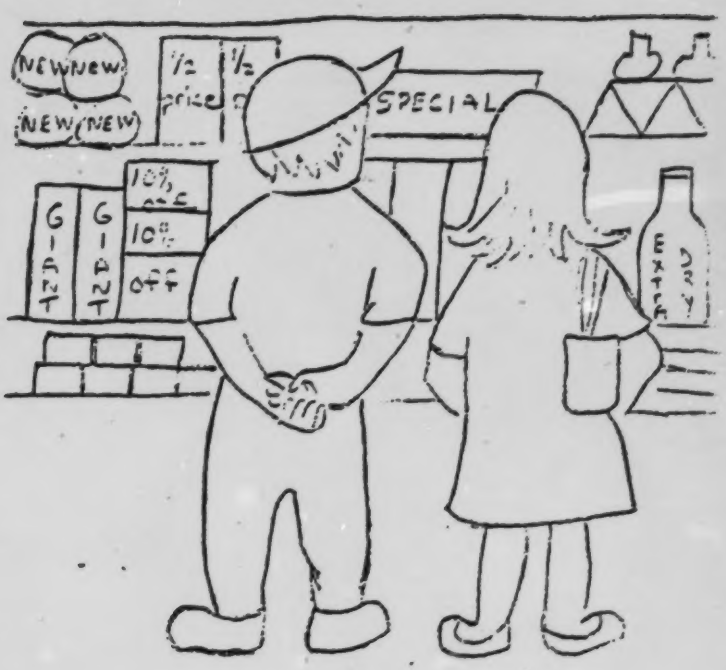
Scoring Procedures for Nutrition Knowledge Test

1. B
2. A
3. B
4. C
5. C
6. C
7. B
8. A
9. B
10. C
11. C
12. B
13. A
14. B
15. C
16. A
17. B
18. B
19. C
20. B
21. A
22. C
23. A
24. C
25. B
26. B
27. A
28. C
29. C
30. A
31. C
32. C
33. A
34. A
35. B
36. C
37. C
38. B
39. B

APPENDIX C

REVISED CONSUMER EDUCATION TEST

CONSUMER EDUCATION KNOWLEDGE TEST



Dear Student:

Thank you for taking part in this study. The information you provide will help us learn what you know about consumer education. If you find any question you do not want to answer, skip it and go on to the next question.

COMPLETE THE FOLLOWING:

SCHOOL _____

GRADE _____

SEX (please check)

_____ Male

_____ Female

SAMPLE QUESTIONS

- For each test question, circle the letter next to the response which best answers the question.

EXAMPLE I:

A healthy snack to buy is:

a. potato chips
b. orange juice
c. candy bar

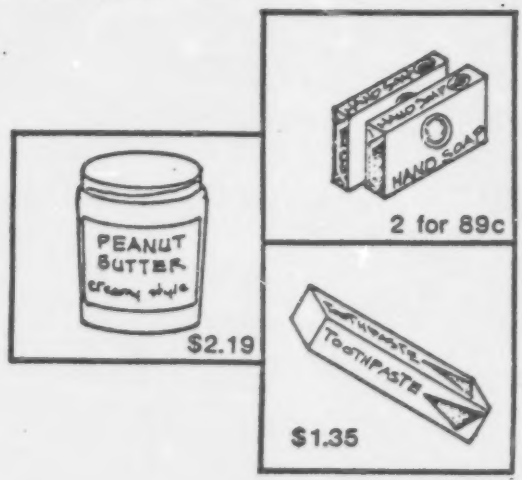
What is the correct answer? "b" is the correct answer.

EXAMPLE II:

Some questions like the one below use pictures along with words. Remember to circle the letter next to the response which best answers the question.

If you went to the store with only $1.00, which of these could you buy?

a. two bars of hand soap
b. a jar of peanut butter
c. a tube of toothpaste



What is the correct answer? If you circled the letter "a", you are correct. The hand soap is the only item priced under $1.00.

Do you have any questions? If you do, turn off the tape recorder and ask your teacher. If you have no questions, you are ready to start the test!

WRITE DIRECTLY ON THE TEST PAPERS

1. Jane says that honesty, education, health and religion are important to her. These are known as
   a. standards
   b. values
   c. resources

2. Which one of these goals is a long term goal?
   a. get a part-time after school job
   b. save money to buy a car
   c. study for a unit test

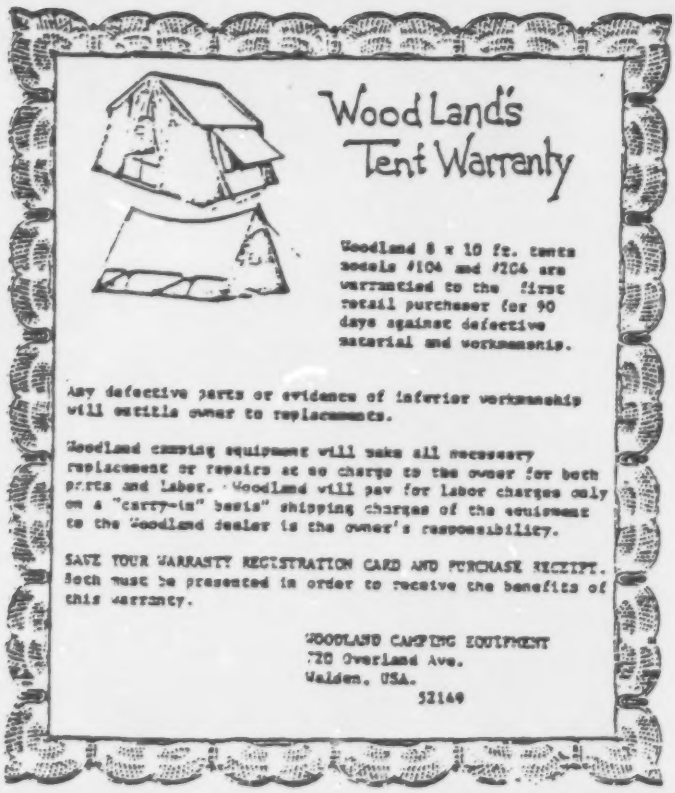
3. A goal is
   a. a belief
   b. something that is necessary
   c. an aim to reach

4. Alice is making a gift for a friend. Her creative ability can be considered a
   a. resource
   b. value
   c. goal

5. Which of the following is an example of a need?
   a. Mary bought a blouse to go with two of last winter's skirts
   b. Alice likes pizza and eats it everyday for lunch
   c. John adds three tapes to his collection of western music

6. When buying a stereo, a good way to compare different brands would be to
   a. read the ads about stereos
   b. ask the salesperson which one to buy
   c. look at the warranties and labels of the stereos

USE THE WARRANTY BELOW TO ANSWER THE FOLLOWING TWO QUESTIONS



Wood Land's Tent Warranty

Woodland 8 x 10 ft. tents models #104 and #204 are warranties to the first retail purchaser for 90 days against defective material and workmanship.

Any defective parts or evidence of inferior workmanship will entitle owner to replacements.

Woodland camping equipment will make all necessary replacement or repairs at no charge to the owner for both parts and labor. Woodland will pay for labor charges only on a "carry-in" basis" shipping charges of the equipment to the Woodland dealer is the owner's responsibility.

SAVE YOUR WARRANTY REGISTRATION CARD AND PURCHASE RECEIPT. Both must be presented in order to receive the benefits of this warranty.

WOODLAND CAMPING EQUIPMENT
720 Overland Ave.
Walden, USA.
52149

7. Woodland's will replace your tent if
   a. you find a rip in it before you use it
   b. it falls apart in one year
   c. you lose a pole

8. In order for this warranty to be good, you must
   a. mail in the warranty registration card
   b. keep the purchase receipt
   c. keep the warranty registr-tion card <u>and</u> the purchase receipt

USE THE LABEL BELOW FOR THE NEXT THREE QUESTIONS

50 FAMOUS
MANWICH RECIPES

Hunt-Wesson Foods
P.O. Box 9688
Minneapolis, Mn.
55196

tomatoes, water, sugar, salt, modified food starch, dehydrated onion, spices, dehydrated peppers, garlic powder, natural flavors

EASY TO MAKE
MANWICH SLOPPY JOES

Brown 1 lb. ground beef in a skillet; pour off excess fat. Add 1 can of Manwich stir and simmer 5 minutes.

Serve on hamburger buns. Makes 6 man-size servings.

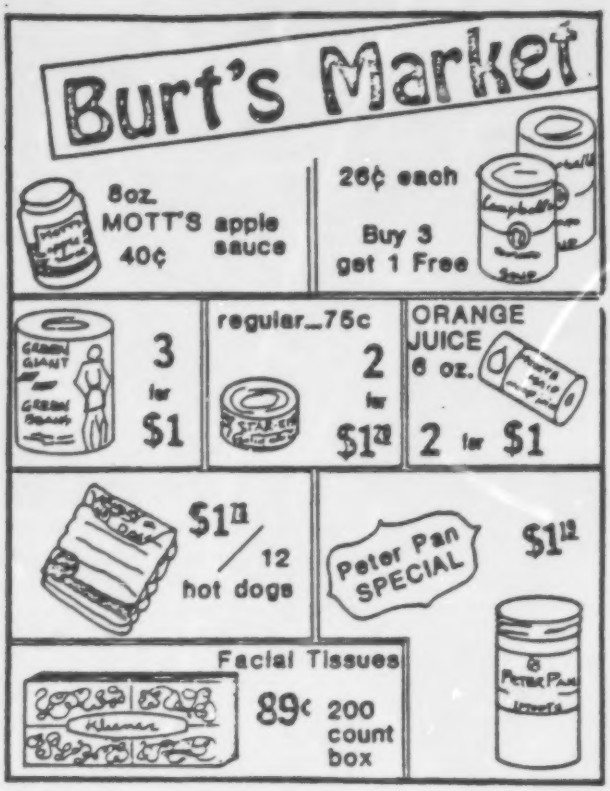
7¢ OFF
ON YOUR NEXT PURCHASE OF MANWICH MEXICAN STYLE SLOPPY JOE SAUCE
7¢ OFF 27000 100126 7¢ OFF

9. What company makes this sauce?
   a. Sloppy Joe
   b. Manwich
   c. Hunt-Wesson Foods

10. The ingredient in the greatest amount is
   a. tomatoes
   b. water
   c. sugar

11. What do you need to add to make these sloppy joes?
   a. salt
   b. ground beef
   c. onion

USE THE FOOD ADS BELOW TO ANSWER THE NEXT TWO QUESTIONS



12. Comparing the two ads, which is the best bargain?

    a. apple sauce

    b. tomato soup

    c. tissues

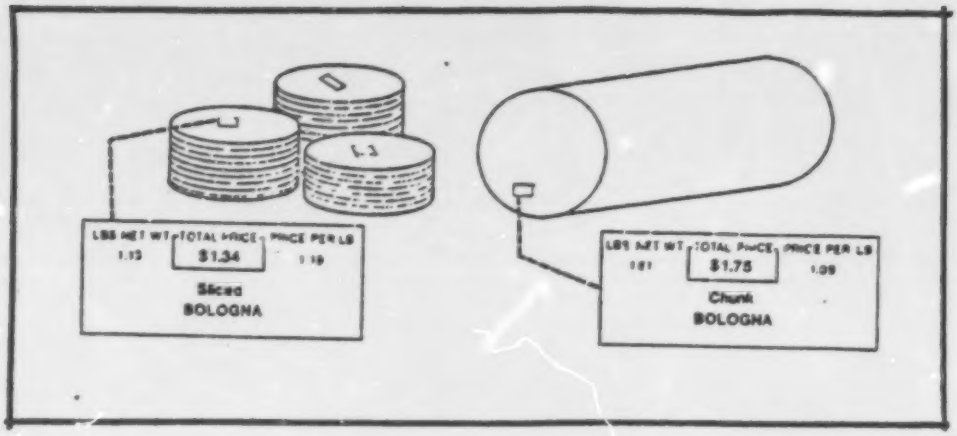
13. How much money would you save if you bought two cans of tuna this week at Burt's Market?

    a. 30¢

    b. 50¢

    c. 60¢

USE THE AD BELOW TO ANSWER THE NEXT QUESTION



14. Which type of bologna pictured above is the best buy?

    a. sliced bologna

    b. chunk bologna

    c. either sliced or chunk bologna

15. Sue needs a new blouse that will be easy to care for and comfortable. Which label would give her what she she wants?

    a. DRY CLEAN ONLY
    100% Silk

    b. 100% Cotton, Wash in warm water

    c. WASH AND WEAR
    65% Polyester, 35% Cotton

16. Which of the following is a fixed expense?

    a. movies

    b. rent

    c. school supplies

USE THE CREDIT BILL BELOW TO ANSWER THE FOLLOWING FOUR QUESTIONS

CUSTOMER NAME B.A. Lance
STREET 1313 Light Brigade
CITY STATE ZIP Anyton, Mn. 53942

ACCOUNT NUMBER 4-527-4236

BILLING DATE # 3-20-80

AMOUNT OF PAYMENT $ _____

PLEASE RETURN THIS SECTION WITH PAYMENT

DATE	STORE	REFERENCE NO.	DESCRIPTION	PURCHASES	PAYMENTS CREDITS
2-10	00	101-293-1rf	THANK YOU FOR YOUR PAYMENT		25.00
2-19	02	002356-Jrs. Spt	Sweater	20.00	
2-19	02	002469-Shirt	Shirt	15.95	
2-24	02	002469-Jewelry	Gold chain necklace		17.82

FROM YOUR PREVIOUS BALANCE	WE HAVE DEDUCTED PAYMENTS	WE HAVE DEDUCTED CREDITS	THEN ADDED PURCHASES	THIS IS YOUR NEW BALANCE	AMOUNT PAST DUE	INCLUDES ANY PAST DUE MINIMUM NOW DUE
78.76	25.00	17.82	35.95	71.89	.00	25.00

FINANCE CHARGE 1.14

TO AVOID ADDITIONAL FINANCE CHARGE PAY NEW BALANCE BEFORE 4-1-80

17. According to this statement, which item was returned last month?
    a. a sweater
    b. a necklace
    c. a shirt
18. How much did you pay the store last month?
    a. $25.00
    b. $17.82
    c. $71.89
19. How much must you pay for finance charge?
    a. $17.82
    b. $25.00
    c. $ 1.14
20. If there was a mistake on the bill, what would you do?
    a. call the store manager
    b. call the credit office
    c. write the Better Business Bureau

21. The finance charge on a bill is added because you
    a. did not pay all of your bill last month
    b. overpaid your bill
    c. had a bad credit rating
22. Tom is unable to keep up payments on a stereo bought on the installment plan. What will probably happen?
    a. the store will give back the payments
    b. the store will pick up the stereo
    c. the store will pick up the stereo and keep the payments
23. You have a job but do not seem able to save any money. Which of the following suggestions would help you?
    a. borrow money
    b. make a plan for saving
    c. save 25% of your salary
24. Someone hit your car and you have a $300 repair bill. You own $100 deductible auto insurance. This means
    a. you would have to pay all the repair costs
    b. the insurance company would pay all the repair costs
    c. you would have to pay $100 of the repair costs
25. Which of the following types of auto insurance is most often required by law?
    a. collision
    b. liability
    c. theft

26. Every year people who work must complete an income tax return. If you have a problem in figuring your taxes, what should you do?

    a. ask a friend

    b. call the Internal Revenue Service

    c. hire a lawyer

27. George has been working in a restaurant. At the end of the year, George's employer gives him a form which tells the amount of money he has earned. This form is called a

    a. W-2

    b. W-4

    c. 1040

USE THE ADS BELOW TO ANSWER THE FOLLOWING QUESTION

a. 1 bedroom $165. Includes utilities, off street parking, appliances & laundry room. No pets. 466-7102 4804 S. 48.

b. 3632 B. Brick duplex, all carpeted, air, washer dryer, 1 bedroom, nice, $185. Available Aug. 1. 488-2058

c. 27th & J. --- 1 bedroom furnished apt., carpeted, offstreet parking, $175 plus deposit. 423-2667

28. Jill does not have any furniture of her own. Which apartment should she select?

    a. 4804 South 48th

    b. 3632 B. Street

    c. 27th and J Street

29. Nancy and John leased an apartment three months ago. A burner on the stove will not work. What should they do?
    a. fix it themselves
    b. call the manager
    c. call an electrician to fix it

30. Dan had his bicycle repaired. The repairperson said it would cost only $15.00. The bill was $3[illegible].00. What should Dan do?
    a. complain to the owner of the shop about the cost
    b. pay the bill without complaining
    c. pay only $15.00

31. Joe needs to have a blender repaired. What would he look under in the yellow pages of the telephone book to help him find a repair shop?
    a. Appliance, Household, Small Repair
    b. Blender
    c. Appliance, Major Repairing

32. If you are not satisfied with a product you bought at a store, you <u>first</u> step should be
    a. call the Better Business Bureau
    b. go to the return counter at the store
    c. ask for the store manager

33. Bill works in a factory where the temperature in the winter time is kept at 65. His feet get cold and he wants to buy some warm socks. Which kind should he buy?
    a. 100% polyester
    b. 100% cotton
    c. 100% wool

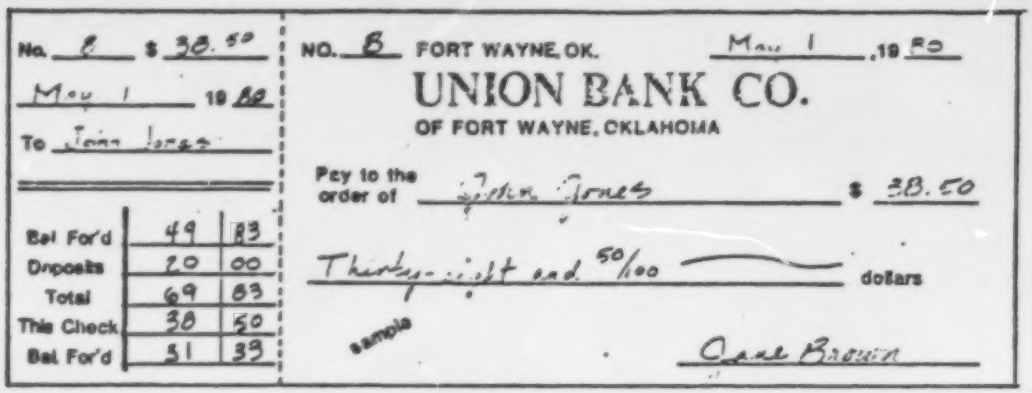
34. To conserve heat energy when preparing food
    a. use a pan the same size as the burner
    b. use a pan bigger than the burner
    c. use a pan smaller than the burner

35. Sharon is looking for a job. What office would have a list of jobs?
    a. Social Security Office
    b. Employment Office
    c. Chamber of Commerce

36. Nancy received some greeting cards that she did not order and a bill for the cards in the mail. What should Nancy do?
    a. pay the bill
    b. return the cards
    c. do not pay the bill

37. If you receive an overdrawn notice about your checking account, you should
    a. return it to the bank
    b. deposit more money in your account
    c. write more checks

USE THE CHECK AND CHECK STUB BELOW TO ANSWER THE FOLLOWING QUESTIONS



No. 8 $ 38.50
May 1 19 80
To John Jones

Bal For'd	49	83
Deposits	20	00
Total	69	83
This Check	38	50
Bal For'd	31	33

NO. 8 FORT WAYNE, OK. May 1, 19 80

UNION BANK CO.
OF FORT WAYNE, OKLAHOMA

Pay to the order of John Jones $ 38.50

Thirty-eight and 50/100 dollars

sample

Jane Brown

38. How much money did Jane Brown have in her checking account after she wrote check no. 7?

a. $49.83

b. $31.33

c. $38.50

39. The amount of money Jane Brown has left in her checking account after check no. 8 is

a. $31.33

b. $38.50

c. $69.83

Scoring Procedures for Consumer Education Test

1.	B	21.	A
2.	B	22.	C
3.	C	23.	B
4.	A	24.	C
5.	A	25.	B
6.	C	26.	B
7.	A	27.	A
8.	C	28.	C
9.	C	29.	B
10.	A	30.	C
11.	B	31.	A
12.	C	32.	B
13.	A	33.	C
14.	B	34.	A
15.	C	35.	B
16.	B	36.	C
17.	B	37.	B
18.	A	38.	A
19.	C	39.	A
20.	B		

APPENDIX D

LETTERS TO ADMINISTRATORS, PARENTS AND TEACHERS

UNIVERSITY OF MINNESOTA
DULUTH

College of Education

Department of Home Economics
120 Home Economics Building
Duluth, Minnesota 55812

Dear Administrator:

I am requesting permission to administer a short (approximately thirty minutes) test to the mildly mentally handicapped students enrolled in the Consumer Foods & Nutrition course offered by the Consumer-Homemaking Department of your school. The test has been developed as a part of a research study to determine what students, particularly those with special needs, have learned about basic concepts covered in Consumer Foods & Nutrition courses. The instrument has been modified in language to be appropriate for mildly mentally handicapped students and will be administered individually by means of a tape recorder in order that there is no discrimination based upon differences among students.

The students need not put their names on the paper and will not be penalized if they decide not to participate in the study. In addition, the parents and/or guardians of each of the students identified as mildly mentally handicapped will be requested to give permission for their child to take the short test.

The research project has been approved by the University of Minnesota Committee on the Use of Human Subjects in Research, and by the State Department of Education.

If you have any questions regarding the study, feel free to contact me at (218) 726-7233. Thank you for your consideration of this request. Please sign the form below to indicate your approval.

Sincerely,

Cheryl Fedje, Assistant Professor
Home Economics Education

I _____ do give permission for the mildly mentally handicapped students
_____ do not

enrolled in the Consumer-Homemaking Consumer Foods & Nutrition course to take a short test during one class period this academic year.

_____
Name Title School

_____
Date

Please return the permission form within a week in the enclosed stamped, self-addressed envelope.

UNIVERSITY OF MINNESOTA
DULUTH

College of Education

Department of Home Economics
120 Home Economics Building
Duluth, Minnesota 55812

May 1, 1980

Dear Parent:

During one class period this spring, we are inviting your child to take part in a state-wide study. We want to find out what students have learned about basic topics covered in Child Development/Parenting, Nutrition, and Consumer Education courses.

If you will allow your child to take part in the study, we will ask him/her to take about thirty minutes to answer some factual questions about basic concepts in Consumer-Homemaking. He/she need not put his/her name on the paper. The test has been modified in language difficulty to be appropriate for your child, and will be administered individually using a cassette tape in order that there is no discrimination based upon differences among students.

We request your permission for your child to take this test, as modified to meet his/her special needs. Would you please indicate your decision on the form below.

If you have any questions, please feel free to contact me at the:

Home Economics Department
University of Minnesota, Duluth
Duluth, Minnesota 55812
(218) 726-7233

Thank you for your cooperation.

Sincerely,

Cheryl Fedje

Cheryl Fedje, Assistant Professor
Home Economics Education

I _____ do give permission for my child to take a short test covering

_____ do not

basic concepts in Consumer-Homemaking during a class period.

Signed _____ Date _____

Please use the enclosed self-addressed envelope to return this form. We would appreciate receiving it as soon as possible.

UNIVERSITY OF MINNESOTA
DULUTH

College of Education

Department of Home Economics
120 Home Economics Building
Duluth, Minnesota 55812

March 21, 1980

Dear Home Economics Teacher:

You are invited to take part in a study of a selected group of students enrolled in Consumer-Homemaking classes in Minnesota. Three tests have been developed to determine what mildly mentally handicapped students have learned about basic concepts in Child Development/Parenting, Nutrition and Consumer Education. In addition, I would like to compare knowledge of those special needs students enrolled in Consumer-Homemaking with those special needs students who are not enrolled in the courses.

The tests have been modified in language to be appropriate for the mildly mentally handicapped student (defined as having an IQ of approximately 55-80). The tests have been designed to be administered individually by a resource person at the end of spring quarter/spring semester and will take approximately 30 minutes to complete.

Please complete the enclosed form if you have mildly mentally handicapped students in the three Consumer-Homemaking subject areas. Also, could you identify one or two similar students who have not taken work in one of the three subject areas? If you do not have students in each of the three areas, would you please ask another teacher in your department to cooperate in the study. Please return the enclosed form in the self-addressed, stamped envelope by April 10, 1980.

At the conclusion of the research study, a summary of the findings will be mailed to you. Your help and cooperation is greatly appreciated.

If you have questions, please feel free to contact me at (218) 726-7233.

Sincerely,

Cheryl G. Fedje

Cheryl G. Fedje, Assistant Professor
Home Economics Education

CGF:mp
Enc.

APPENDIX E

ILLUSTRATIVE FIGURES FROM TABLE 1

FIGURE 7

Mean Scores by Test for the
Have Not Group

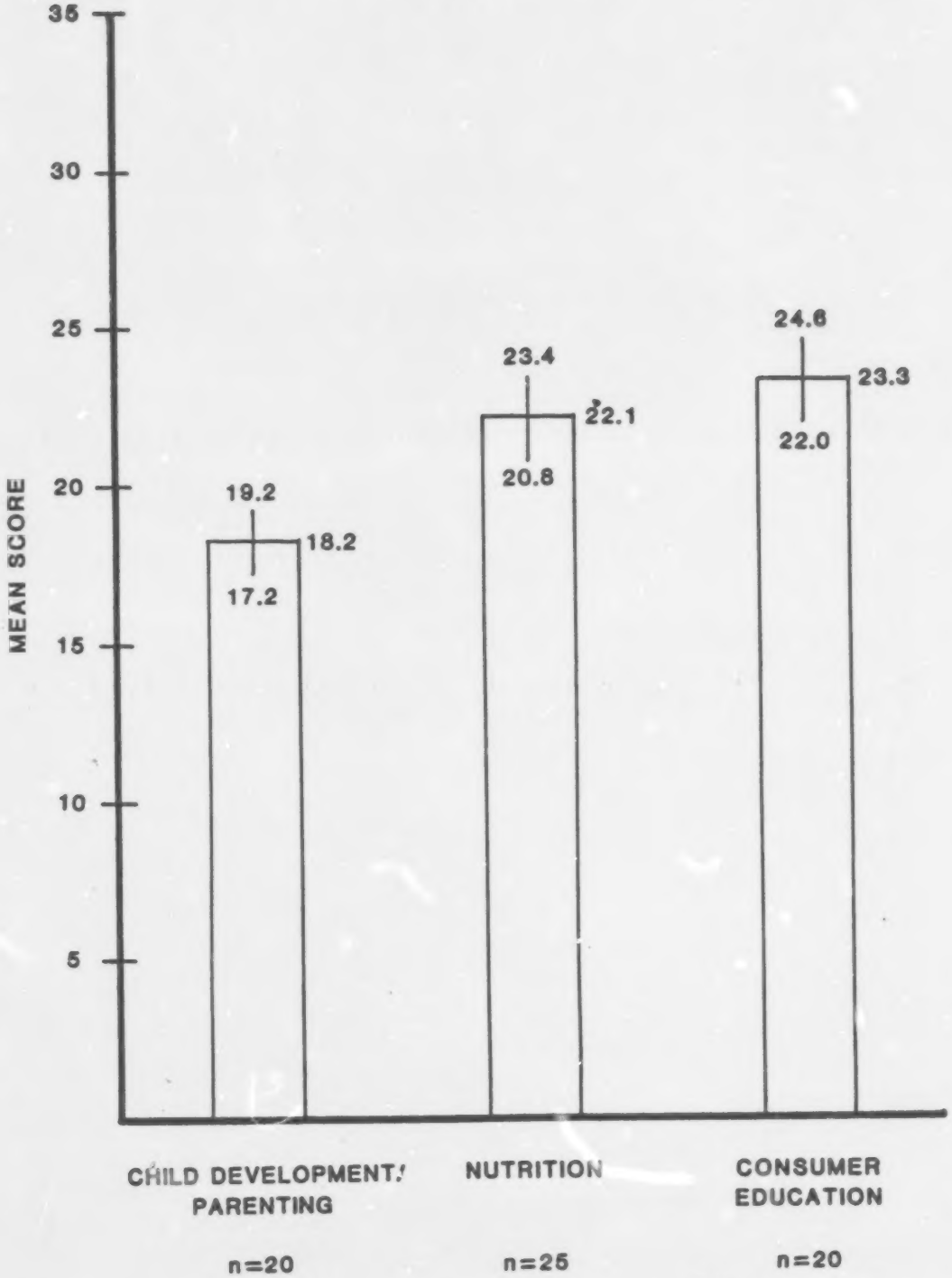


FIGURE 8

Mean Scores by Test for the
Have Group

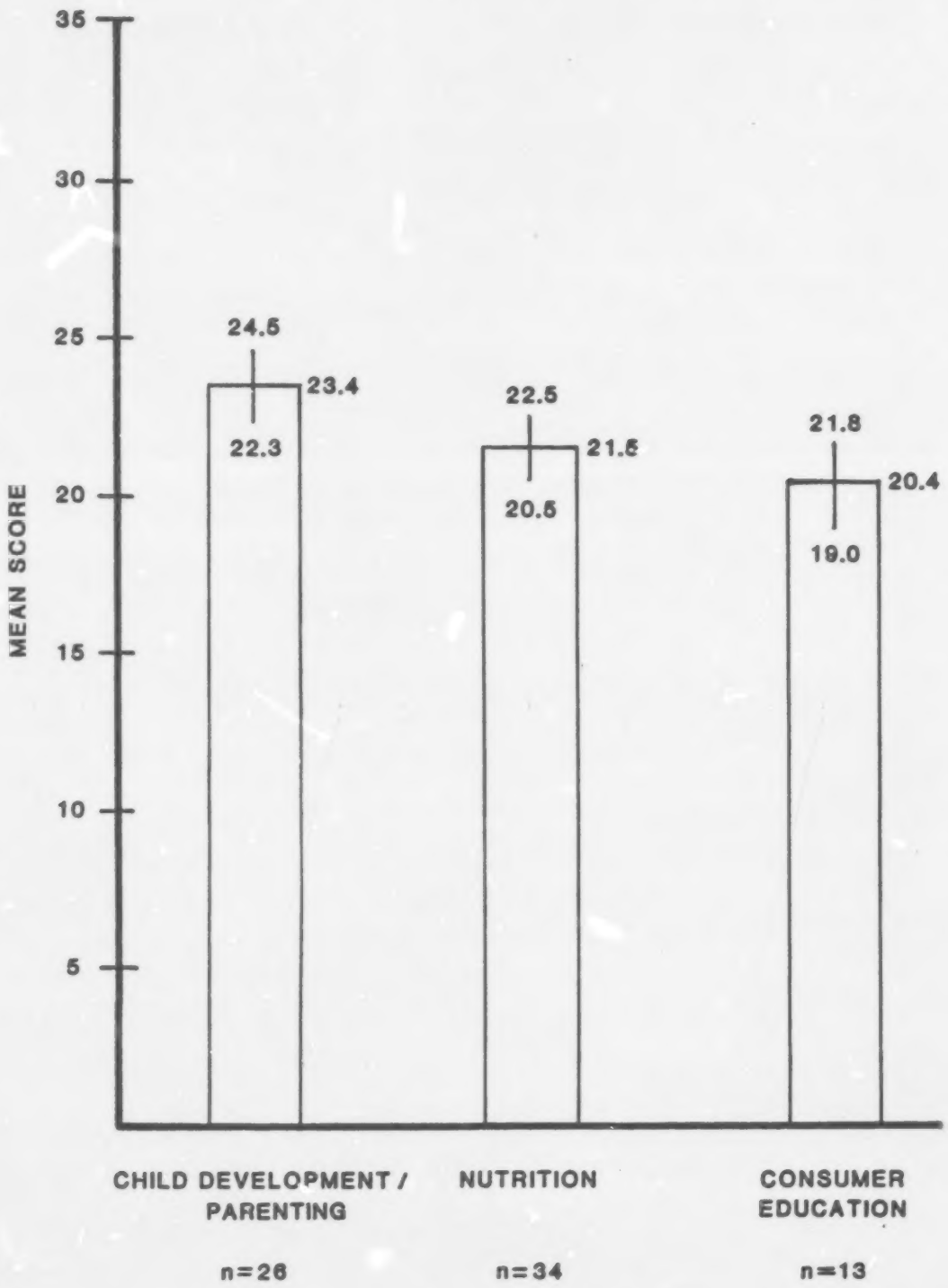


FIGURE 9

Mean Scores by Test for the
Referent Group

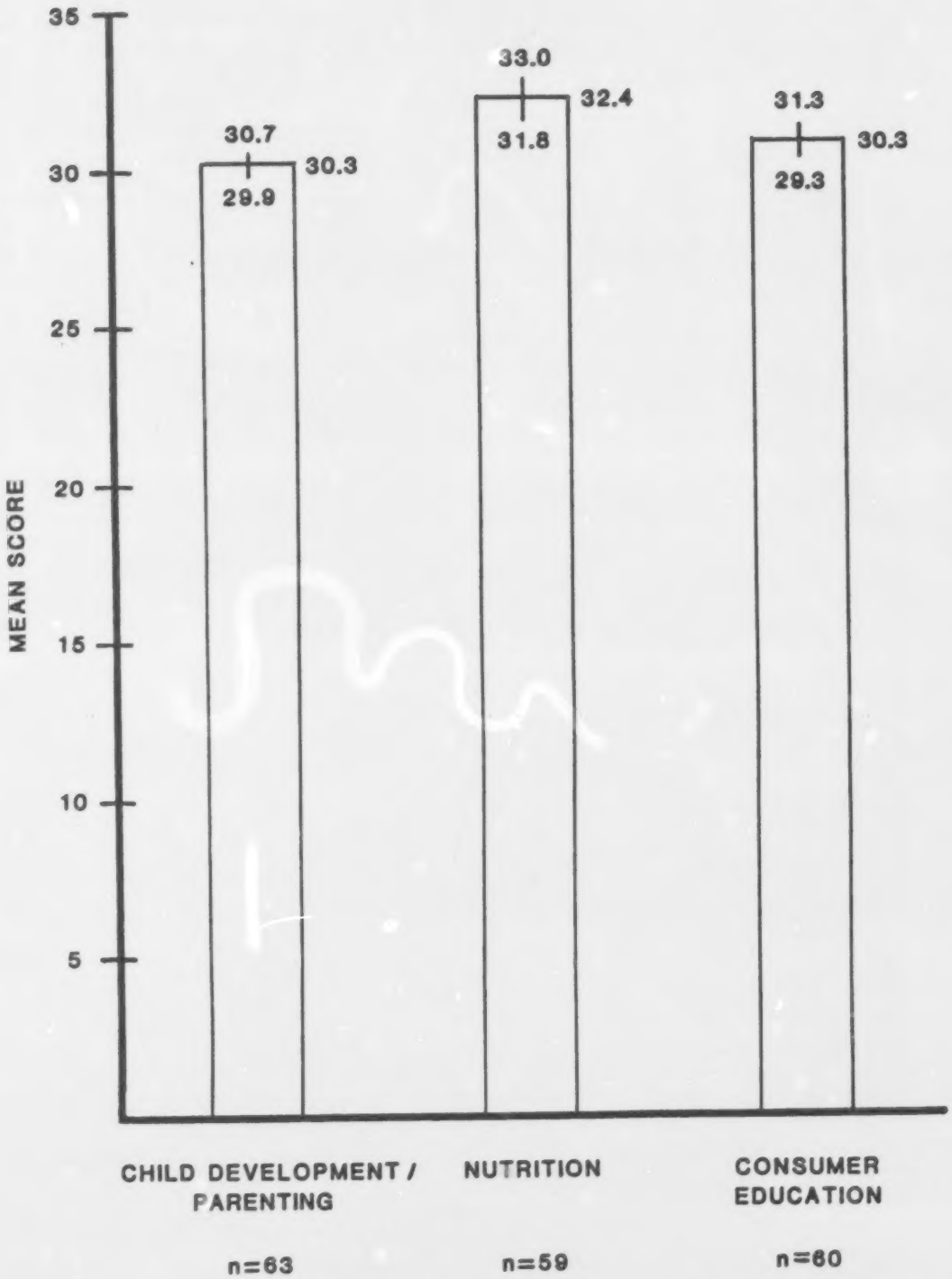


FIGURE 10

Overall Mean Scores by Test
(Column Totals)

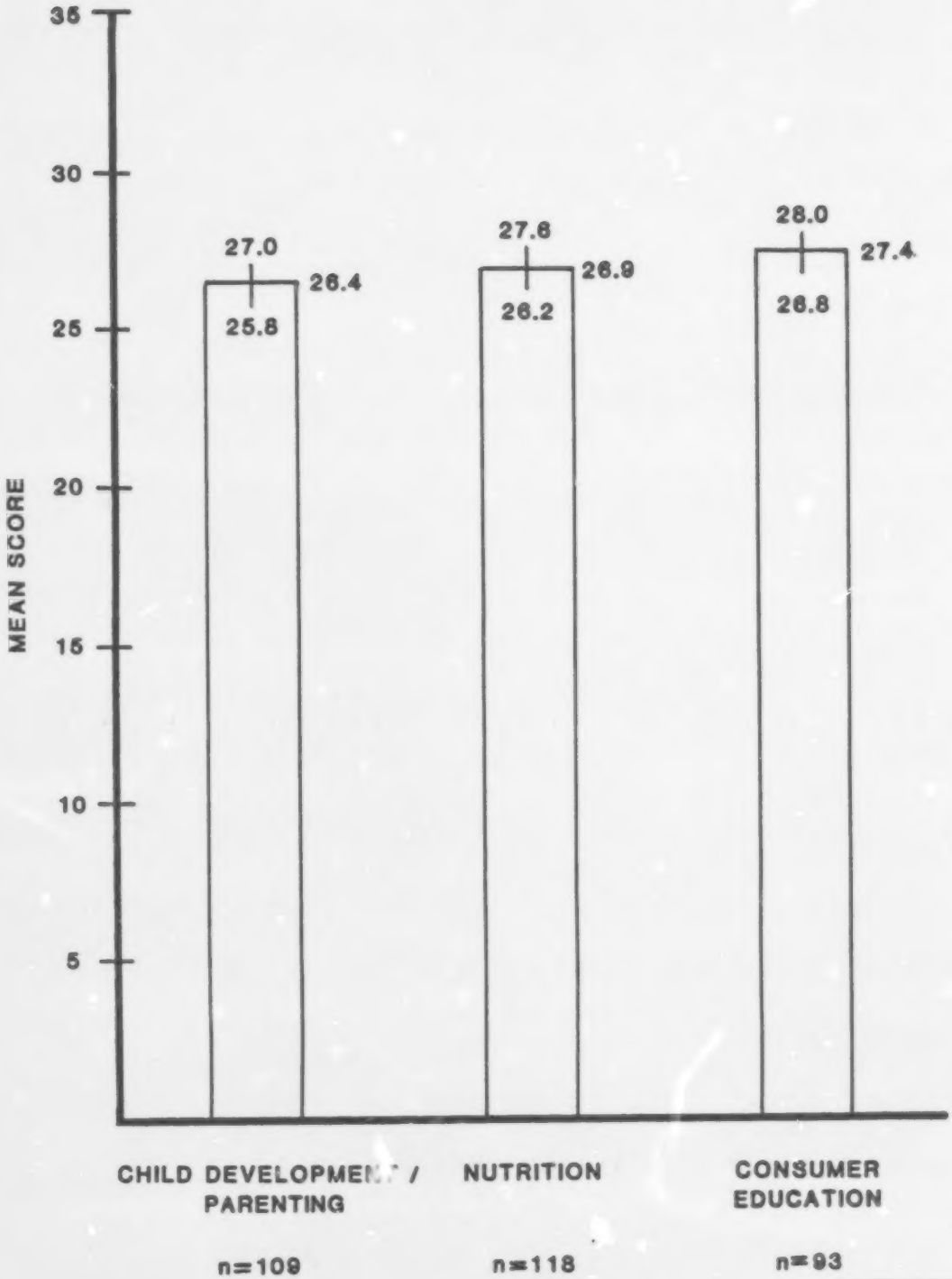


FIGURE 11

Overall Mean Scores by Groups
(Row Totals)

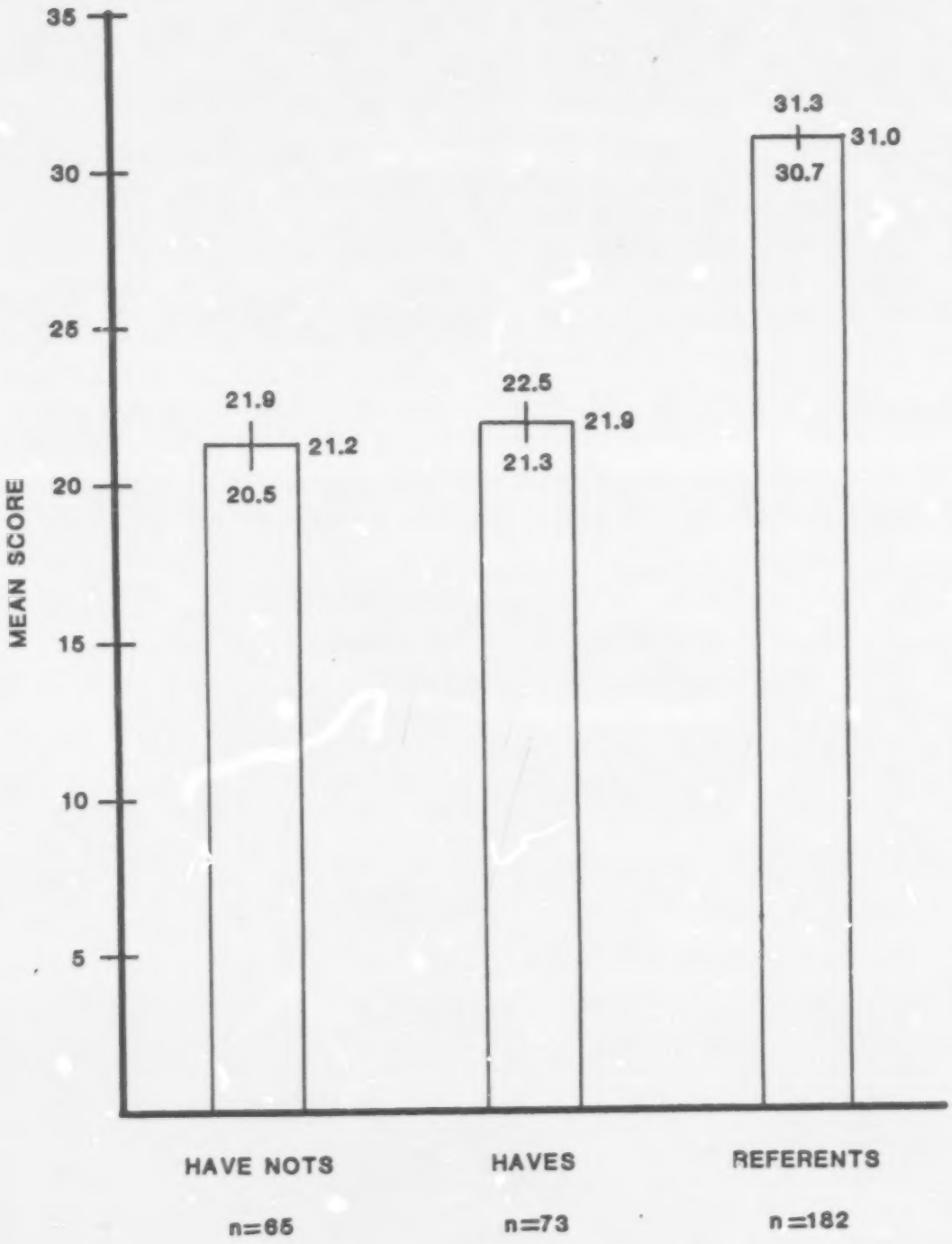
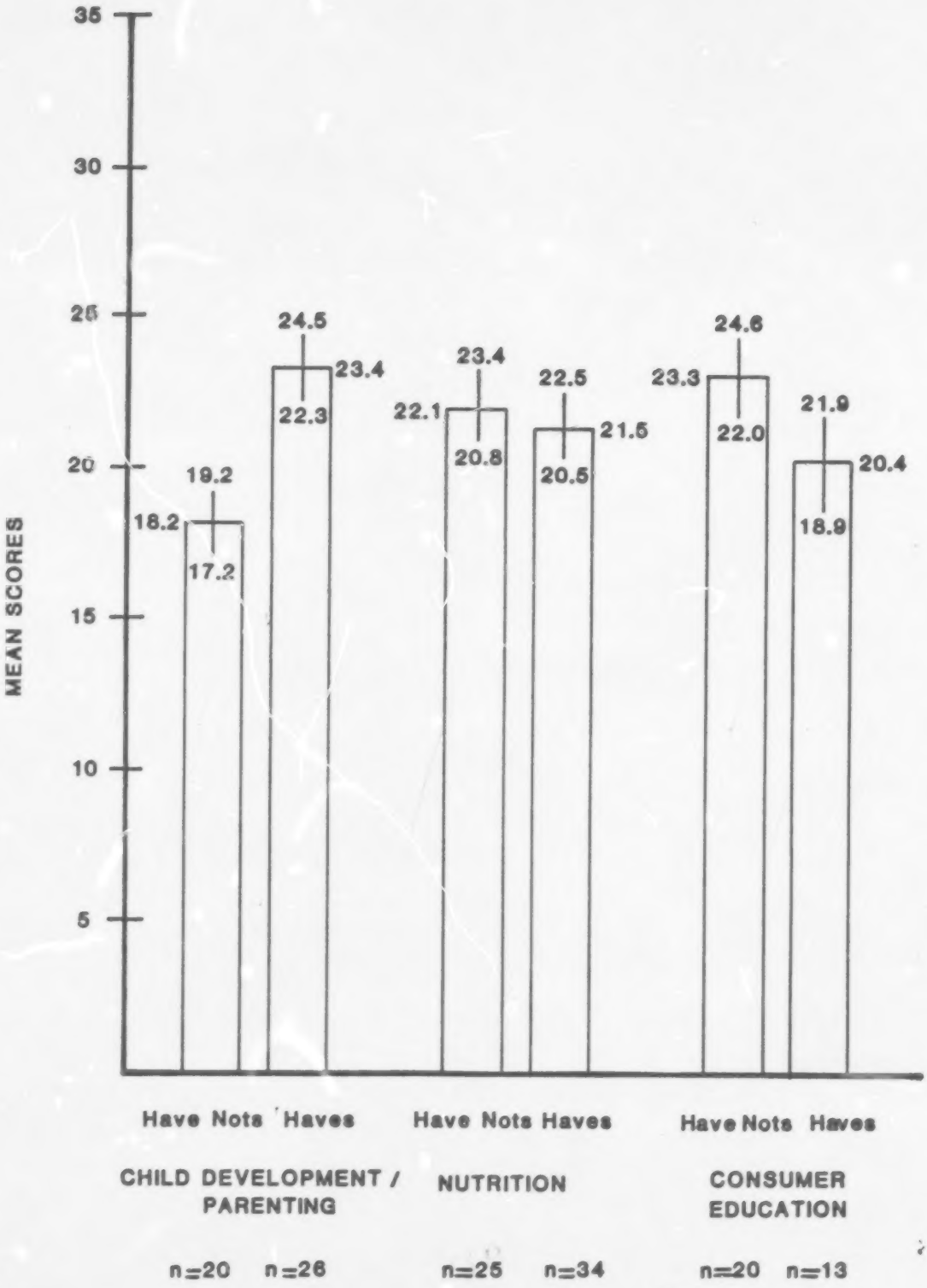


FIGURE 12

A Comparison between the Have and Have Not Groups by Test



APPENDIX F

ITEM ANALYSIS

ITEM ANALYSIS: CHILD DEVELOPMENT/PARENTING
TEST COMBINED MMH GROUPS (N=46)

ITEM	DISCRIMINATION (γ p. b.)	DIFFICULTY INDEX
1*	.12	.75
2	.37	.34
3	.40	.64
4*	.06	.47
5	.37	.31
6	.28	.86
7	.23	.47
8	.48	.53
9	.20	.39
10	.42	.44
11	.25	.22
12	.28	.41
13	.42	.63
14	.26	.29
15	.30	.37
16	.29	.53
17	.23	.41
18	.54	.56
19	.40	.53
20	.25	.59
21*	.06	.59
22	.31	.63
23*	.16	.31
24	.48	.56
25	.51	.59
26	.38	.80
27*	.18	.47
28	.58	.76
29	.31	.66
30	.51	.59
31*	.17	.37
32	.52	.75
33*	.14	.31
34	.25	.58
35	.34	.71
36	.26	.71
37	.41	.47
38	.21	.85
39	.30	.68
40	.41	.63

*Removed from Combined MMH Test Results

ITEM ANALYSIS: NUTRITION TEST
COMBINED MMH GROUPS (N=59)

ITEM	DISCRIMINATION (rp. b.)	DIFFICULTY INDEX
1	.45	.89
2	.38	.28
3*	.04	.37
4	.46	.61
5	.22	.17
6*	.20	.24
7	.19	.63
8	.19	.33
9	.27	.28
10*	.22	.46
11	.43	.43
12	.43	.83
13*	.17	.33
14*	.18	.35
15	.46	.41
16	.27	.48
17	.39	.80
18*	.15	.59
19	.50	.63
20	.42	.67
21	.42	.46
22*	.17	.35
23*	.19	.50
24	.39	.59
25*	-.06	.37
26	.24	.39
27	.22	.37
28	.51	.35
29	.34	.87
30	.63	.57
31	.39	.76
32	.33	.43
33	.31	.89
34	.47	.70
35	.49	.61
36	.29	.83
37*	.18	.59
38*	.15	.57
39	.44	.50
40	.37	.63

*Removed from Combined MMH Test Results

ITEM ANALYSIS: CONSUMER EDUCATION
TEST COMBINED MMH GROUPS (N=33)

ITEM	DISCRIMINATION (rp. b.)	DIFFICULTY INDEX
1	.43	.36
2*	.16	.88
3	.55	.70
4	.46	.55
5	.45	.55
6*	.16	.24
7*	-.31	.70
8	.37	.73
9	.35	.58
10	.34	.30
11	.45	.70
12	.41	.61
13	.23	.82
14*	.09	.64
15	.29	.52
16*	.15	.39
17	.21	.21
18	.44	.45
19*	.16	.91
20	.42	.67
21*	.02	.91
22	.50	.61
23	.52	.64
24*	.16	.12
25	.30	.24
26	.30	.45
27	.28	.61
28	.42	.55
29	.40	.21
30	.39	.52
31	.55	.67
32*	.10	.21
33	.34	.30
34*	-.09	.91
35	.37	.79
36	.28	.67
37	.23	.39
38	.32	.76
39	.45	.70
40	.56	.39

*Removed from Combined Test Results

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